

# USAID Transform WASH

## Contract Management Training Manual



Prepared for Regional, Zonal and Woreda  
WASH Team

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USAID TRANSFORM WASH sets out to improve water, sanitation and hygiene (WASH) outcomes in Ethiopia by increasing access to and sustained use of a wide spectrum of affordable WASH products and services, with a substantial focus on sanitation.

It does so by transforming the market for low-cost quality WASH products and services: stimulating demand at community level, strengthening supply chains and building the enabling environment for a vibrant private market.

USAID TRANSFORM WASH is a USAID-funded project implemented by PSI in collaboration with SNV, Plan International, and IRC. The consortium are working closely with government agencies - including the Ministry of Health, the National WASH Coordination Office and regional governments.

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# 1. What is Contract Management?

Contract Management could be defined as a multi-stage process that goes on through the entire duration of the contract and ensures that the parties meet their contractual obligations in order to deliver the specific objectives provided in the contract.

The main purpose of contract management is to make sure that the objectives of the contract (supply of goods, delivery of services or execution of works) are met in a timely fashion and value for money is achieved. In practice, this means optimizing the efficiency of the processes, balancing costs and risks against returns and ideally aiming for a continuous improvement in performance over the life of the contract.

**Therefore, the ultimate objectives of contract management are:**

→ **Effectiveness**

The first and foremost condition of successful contract management is *getting the job done*. This translates in the fact that the ultimate scope/objective of the contract is accomplished, i.e.:

- (i) Goods are delivered/installed;
- (ii) Services are performed;
- (iii) Civil works are completed.

→ **Efficiency**

Just getting the job done is not enough for a successful contract management. We should also be concerned about *how* the job is getting done. The aim should always be to get the job done *in the best possible way*. This means that the scope/objective of the contract is accomplished within the agreed:

- (i) Costs (budget);
- (ii) Time (duration);
- (iii) Quality (functional parameters).

## 2. Relationship between Procurement and Contract Management

Procurement process should be seen and understood as the entire process that leads to the achievement of the ultimate scope of the respective contract (be it supply of goods, delivery of services or completion of civil works). That would ideally comprise all the steps from needs assessment and planning, going through bidding/selection procedures, contract award and through to successful completion of the contract.

A successful procurement does not mean only a timely and “clean” bidding or selection process because (as reality proves) most of the challenges and risks actually occur during the contract management stage.



Contract management is thus an integral part of the procurement process and all the stakeholders should continue to act together throughout the entire lifetime of the contracts to ensure that the results are achieved.

Post contract award is the stage where most fraudulent and corrupt practices, time and costs overruns, default on quality etc are encountered.

However, it is critically important to note that the foundations of a sound contract management are laid at the procurement stages. The quality of the contract documents is perhaps the most important pre-condition of a proper contract management.

Ultimately it all comes down to having selected

- *The right type of contract,*
- *Formulating the proper qualifications criteria,*
- *Laying down the proper conditions of contract,*
- *Having very precise design, specifications or Terms of Reference,*
- *Making a correct award and only after that having the right people and tools for contract administration.*

Comes If any of these critical stages have not been adequately addressed at their respective time, chances are that the contract would be poorly constructed and its administration is flawed from the very outset. It doesn't matter how good a project manager is or how well versed in contract management he is, if the contract documents he has to work with are poorly prepared.

Since the main assumption of a well-managed contract is a well-constructed contract, and these two can never be completely split, references are made throughout this text to actions or issues to be considered during the procurement stage that have a direct impact on the quality of contract management.

### **3. Managing risks associated with Contract Implementation**

One of the key requirements of achieving efficiency is being able to anticipate and to properly address as many potential risks as possible. Risk management aims to ensure that all that can be done will be done to ensure that the contract objectives are achieved within the agreed costs and time.

The importance of proper risk management is often underestimated and only appears critical when the trouble has already appeared. Most people tend to forget that anything and everything can go wrong during contract implementation. Even some experienced professionals, who have encountered many difficult situations, tend to have a short memory and fail to learn from previous experiences.

## 4. Risk Identification

The team responsible with contract management should try to identify as many potential risks as possible. This is not an activity with a certain duration at a definite moment in time (e.g. at the start of the contract), but an ongoing process throughout the entire life of the contract, because new kinds of risks can become evident as the contract progresses.

A complete and exhaustive description of all possible events that may affect the successful implementation of a contract is impossible to do. However, the risks can be grouped into three broad categories, corresponding to the elements of an efficient contract management as described above:

- Risks related to **costs** (events that may affect the budget through cost overruns);
- Risks related to **time** (events that may delay the implementation of the contract);
- Risks related to the **objective** of the contract (events that may jeopardize the delivery or compromise the quality of the output).

In addition, risks can be grouped by their cause, rather than their effect (and sometimes it is easier to identify potential risks using this approach). Some of the most important risks could be grouped as follows:

Issues originating from the quality of the bidding documents / terms of reference:

- Due to the poor quality of the specifications (for goods and civil works) and Terms of Reference (for consultants) the scope of the contract is not fully understood by the contractors (misinterpreted or underestimated);
- Poor specifications leading to arbitrary interpretations of the resources required or the quality of deliverables;
- Contradictory provisions in various documents (e.g. drawings vs. technical specifications; special conditions of contract vs. terms of reference or specifications etc.) which is misleading the contractors, who naturally choose the most favorable of the conflicting clauses;
- Failure to request documents that are critical for Employer's interests (e.g. insurances, manufacturer's authorizations, performance securities, bank guarantees etc.);
- Failure to provide minimum criteria or specific benchmarking for the assessment of functional guarantees, acceptance of deliverables or passing of tests on completion;
- Payment schedules not adequately linked to the physical progress, leading to front-loaded payments and the tendency to delay implementation of the rest of activities once the bulk of the contract has been paid. This happens when unsecured or unrealistically high advance payments are allowed (i.e. covering more than normal mobilization costs of the contractor);
- Failure to provide delay damages or penalties for failing to meet the functional guarantees;
- Unclear provisions regarding price adjustment (lack of reference to formulas, indexes, weightings).

Issues originating from the bidding/selection process:

- Acceptance of conditional bids or proposals that deviate from the standard contract clauses based on which the bids were invited;

- Failure to properly assess bidders' qualifications (experience, technical expertise, financial standing, human resources etc.);
- Failure to detect collusion schemes between bidders (e.g. lowest bidders withdraw their bids and are later found as subcontractors to the awarded and more expensive bidder).

Contractors' failure to understand or to assume all their contractual obligations

- Delayed submission of securities or insurance policies;
- Submission of deliberately wrong documents;
- Attempts to offer less competitive substitutes for staff, goods or materials;
- Deliberate delays in implementation;
- Frequent requests for change orders/variations.

## 5. Issues related to the quality of Contract Management itself

- Inexperienced contract management team (unfamiliar with the technical specifications, terms of reference and conditions of contract, as well as with standard contract monitoring tools – Earned Value Management, GANTT chart etc.);
- Weak or corrupt contract management team, yielding under contractors' pressures, threats or offerings;
- Improper supervision of the contract (leniency towards the contractors)
  - Accepting deviations from the technical specifications or terms of reference;
  - Approving payments for inexistent goods, works or services;
  - Multiple payments made for the same deliverables;
  - Approving change orders/variations without due justification;
  - Failure to impose appropriate remedies.

Issues related to other factors that are not internally controlled:

- Economic risks (economic crisis, shortage of credit, labor or resources etc.);
- Political risks (change of Government priorities, political instability, war etc.);
- Social risks (social unrest, revolution, ethnic/racial conflicts etc.);
- Natural events (earthquakes, floods, storms, droughts etc.);
- Other risks (epidemics, accidents etc.)

## 6. Risk Analysis

Once all (or most) potential risks have been identified, the next logical step is to analyze them in order to determine their potential impact on the implementation of the contract. This is usually done by taking each potential risk and analyzing it from two perspectives:

- The **probability** of that risk actually happening;
- The **impact** (potential damage) of that event.



Ranking the risks by their probability of occurrence and by their potential impact on contract implementation is a very useful tool in determining the most relevant risks. Of course, the most important risks would be those that score high under both criteria (events that are likely to happen AND would have a significant impact on project implementation). These high-probability/high-impact events should be the main areas of concern (for example: an inexperienced contract management team is an important liability and is very likely to have a serious impact on the successful implementation of the project; a natural disaster is also an event with a potentially high impact, but its probability of occurrence is rather limited).

## 7. Addressing risks

After potential risks have been identified, analyzed and ranked according to their probability and impact, the contract management team must

- *Develop the adequate counter-measures to mitigate or eliminate those risks;*
- *Assign specific responsibilities and deadlines to team members in charge with the respective actions.*

### Practical Example

#### Sample checklist to support risk analysis in a Civil Works Contract

Risk	Probability	Impact	Counter-Measure	Deadline	Responsible
Inexperienced project team	High	High	Training for all team members (in FIDIC, project management, Bank procurement etc.)	September. 30, 2017	Project Manager
Contractor not experienced in donor projects or FIDIC	<b>High</b>	<b>High</b>	- Present all details during kick-off meeting(s); - Request training of Contractor's staff; - Hire experienced Project Manager or independent technical consultant	Contract effectiveness; throughout contract execution	Project Manager;  Contractor's Project Manager

Natural disaster	Low	High	Ensure that all adequate insurance policies have been contracted, paid and maintained	Contract effectiveness, then quarterly	Project Manager
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Once all reasonable risks are identified, analyzed and properly addressed, they cease to be risks and become day-to-day contract management issues (hope for the best, but prepare for the worst).

No one can be 100% covered against any conceivable or inconceivable risk, but most risks can be significantly reduced or eliminated through careful planning. However, extraordinary events do happen sometimes, but it is up to us how well prepared we are to deal with any situation. An entire modern literature is devoted to the management of foreseeable risks, but also to those events that virtually no one can predict.

## 8. Reactive vs. Proactive - Attitudes towards risks

There are two possible ways to deal with the potential problems or events that may occur during the implementation of a contract:

1. The **reactive** approach – responding to problems after they occur. The best we can hope is to limit the extent of the damage that has already been produced (damage control).
2. The **proactive** approach – anticipating the problems (by going through the steps described above – identify, analyze and address risks) and taking precautionary actions to prevent them from happening.

## 9. What kinds of skills are needed?

Similar to virtually any activity that involves relations between parties, there can be no universal recipe that would fit the needs and peculiarities of each contract. While the letter of the contract should never be subject to negotiations, lines are harder to draw when it comes to interpreting the spirit of the contract or when dealing with situations entirely outside the contract. This is why different or even opposite approaches to contract management can be equally valid, depending on the situation, relationship between parties etc.

*Firm versus flexible; adversarial versus conciliatory; win-lose versus win-win*

A firm contract management seems to be the obvious choice to ensure that the other party would fulfill its obligations in a timely and efficient manner. However, this does not mean that

a conflicting approach is the solution for a successful contract management. On the other hand, leniency is clearly not an option either.

A good contract management should go much further than ensuring with an iron fist that the agreed terms of the contract are being met – this is a critical step, but only the first of many. Regardless of the scope or complexity of the contract, there will always be some tensions between the different perspectives of the two parties. Sound contract management is about resolving or mitigating such tensions in order to build a “win/win” relationship based on mutual understanding, trust and open communication.

The modern way of contract management seems to be moving away from the traditional formal methods of contract management which tended to keep the other party (supplier, contractor or consultant) at arm's length and often became adversarial because of the suspicion that the counterpart is always trying to cheat or to tilt the balance of the contract in its favor.

The new approach moves towards fostering a constructive relationship with the counterpart so as to enable an increased degree of ownership of the contract processes from both sides.

## **10. What does this actually mean?**

In effect, this means that a good contract management should not be ensured solely by making exclusive use of the so-called “hard skills” of the people involved (technical, engineering or administrative skills that form the “teachable” skills). These obviously remain *sine qua non* skills (an excellent engineer or a procurement specialist who know the contract inside out are valuable and extremely necessary assets), but they are far from being sufficient for ensuring a high quality contract management.

A whole range of “soft skills” are additionally required to build a successful contractual relationship. These include a wide variety of personality traits, attributes or even talents like people skills, communication abilities, team spirit, cooperation, leadership, facilitation, conflict mitigation, planning, coaching, motivation, innovative drive, perseverance etc.

All these hard and soft skills together would make the portrait of the ideal contract management team. It may seem like an idealization or something only fit for an unreal world where the other party would match all these traits and goodwill. Many would argue that you cannot expect your team to possess or to employ all these rather ideal features, when your contractual counterpart clearly does not fit the description of the perfect contract party. But it's actually quite the other way around – the more “imperfect” the other side is, the more skills you need to possess or develop in order to be able to counter their less orthodox plans or actions.

## **11. The portrait of the efficient Contract Manager**

The efficient contract manager (as an individual or as a sum of individuals) would have the following characteristics:

Feature	Importance
Very thorough <b>knowledge</b> of all contract documents (conditions of contract, technical specifications, terms of reference etc.) and full understanding of their interdependencies (e.g. how to read the bills of quantities in conjunction with the technical specifications, the method of measurement and the drawings)	<b>Critical</b>
<b>Integrity</b> (not yielding under pressure – both Contractor's or administrative/political)	<b>Critical</b>
<b>Proactive</b> (risk management skills)	<b>Important</b>
<b>Communication</b> skills	<b>Important</b>
<b>Common sense</b> and all other " <b>soft skills</b> "	<b>Highly desirable</b>

## 12. Contract Management – Who should do it?

Three distinct situations may occur:

- "In-house" contract management means that the contract may entirely be managed by the implementing agency alone, due to availability of highly qualified and experienced staff;
- "Full Outsourcing" means that the contract management should entirely be entrusted to specialized teams of experts, project management companies, engineering firms, procurement agents etc. contracted by the implementing agency.
- "In-house + Outsourcing" means that the contract may be managed by the staff of the implementing agency, supported (in various degrees) by outside experts. These experts could provide services ranging from very specific expertise (e.g. specialized engineering, IT solutions etc.) to ensuring a permanent presence on site (in the case of civil works contracts) on behalf of the Employer.

One important note here: "outsourcing" and "full outsourcing" in particular refer merely to the transfer of responsibilities of making sure that the job gets done. Contract management can never actually be fully outsourced since the implementing agency should always retain vital functions like final control, acceptance of the deliverables (output) and payment. Outsourcing of the "technical" side of the contract management shall not diminish in any way the responsibility of the implementing agency or its ownership of the contract implementation process.

## 13. Contract Management Step-by-Step

A complete description of all situations and issues that may affect the proper implementation of a contract is virtually impossible to do given the hundreds of different circumstances in which these contracts are being implemented.

Detailed presentation of many such issues is made separately in the next sections of this Manual, each of them dealing with one major type of procurement (goods, works and consulting services).

However, some aspects of contract management are generally valid for most (if not for all) contracts, regardless of the type of contract or the procurement method used.

Here are the most important issues to consider:

- **Internal arrangements:**
  - *Assigning specific tasks to the individual or the team responsible with the contract management (e.g. procurement specialist; technical expert; project management company etc.) through clear and comprehensive job descriptions (general or project-based);*
  - *Establishing internal procedures (hierarchy, communication, level of authority, flow of documents, verification and acceptance procedures, payment procedures, internal audit etc.);*
  - *Coordination arrangements with third parties (other agencies, contractors, end users, beneficiaries etc.).*
  
- **Kick-off meeting with the supplier/contractor/consultant but also with other important stakeholders (if applicable – designers of specifications, Engineer, Project Manager, end users and beneficiaries of the goods, services or civil works, local community etc.)**
  - *Introducing the parties, their roles and responsibilities (especially when delegating authority to Engineer or Project Manager);*
  - *Establishing the contact parties/representatives and communication procedures (mechanisms, frequency etc.);*
  - *Review of contract documents (conditions of contract, technical requirements/terms of reference, payment schedules and covenants, implementation milestones/tasks/deliverables, priority of contract documents etc.);*
  - *Review of applicable legislation and any obligation deriving in connection to the execution of the contract in the Employer's country (e.g. contract or product registration; registration of contractor in the Employer's country for fiscal purposes, tax regime etc.);*
  - *Define escalation procedures to unblock critical situations or bottlenecks (delays in performance or in obtaining permits and approvals; abuses of power from Project Manager of Engineer; non-performance from Contractor's staff etc.);*
  - *Ensuring that all parties involved in the contract implementation share the same understanding of the contract terms and conditions; of each other's expectations; of the timeframe; of any particular constraints in the implementation;*
  - *Establishing clear reporting procedures (level, frequency, templates, minimum information etc.);*
  - *Setting the Effective Date or Commencement Date;*
  
- **Processing advance payments/verification of advance payment guarantee and performance security:**
  - *Amounts;*
  - *Validity;*
  - *Issuing bank/certified signatures;*
  - *Unacceptable deviations/conditions;*

- **Verification of insurance policies**
  - Coverage;
  - Validity;
  - Amounts;
  - Jointly insured parties (when applicable);
  - Exclusions;
  - Deductibles;
  - All terms and conditions that may render the policies invalid under certain circumstances or events;
  - Notification requirements;
  - Proof of payment of insurance premiums.
  
- **Checking proper mobilization of the supplier/contractor/consultant (financial resources, manpower, plant, equipment, deployment on site, site facilities etc.);**
  
- **Inspections and tests (where applicable)**
  - Pre-shipment inspections;
  - Inspections at delivery to project sites;
  - Inspections and tests at manufacturers' workshops;
  - Model testing;
  - Site inspections;
  - Testing of materials and workmanship;
  - Sampling;
  - Verification of deliverables
  - Tests on completion.
  
- **Quality control and rejection of non-compliant inputs**
  - Deviations from technical specifications;
  - Removal of defective work;
  - Replacement of staff;
  - Approval/Rejection of sub-contractors;
  - Rejection of deliverables;
  - Functional guarantees.
  
- **Health & safety and environmental protection issues**
  - Risks and hazard to Employer's personnel or third parties;
  - Occupational risks to Contractor's personnel;
  - Risks to the environment.
  
- **Use of adequate project management tools for time and cost control (especially useful for civil works contracts)**
  - Work Breakdown Structure (WBS);
  - Program Evaluation and Review Technique (PERT);
  - Critical Path Method (CPM);
  - Gantt Chart;
  - Earned Value Management (EVM);
  - Issues Log;
  - Inspection and Control Logbook.

- **Changes in quantities (change orders, variation orders)**
  - Verification of supporting documents (how appropriate or necessary are the proposed changes/variations);
  - Level of approval;
  - Changes in unit rates;
  - Compensation events (increase in cost and extensions of time);
  - Effect on Contract Price and amendments to the Contract (if necessary).
  
- **Price adjustment**
  - Applicability;
  - Verification of indexes (base values, correct reference to applicable indexes);
  - Verification of weightings.
  
- **Use of Provisional Sums or contingencies**
  - Check if their use is appropriate or necessary;
  - Approval of the Engineer/Project Manager;
  - Verification of actual use.
  
- **Review and approval of payment applications**
  - Well established mechanism for the verification and approval of payment documents – internal audit, four eyes principle etc.
  - Verification of unit rates, prices and quantities;
  - Verification of supporting documents (invoices; interim payment certificates; monthly statements; actual re-measurement; timesheets; proofs of actually incurred expenditures; bills of lading; insurance policies; manufacturers' authorization; deliverables; operational acceptance; taking over certificate; bank guarantees etc. as applicable);
  - Existence of required approvals (duly certified monthly statements and interim payment certificates; signed timesheets; Engineer's or Project Manager's approvals; approval of Client's Coordinator on the deliverables etc. as applicable);
  - Check if the requested amounts have not been already paid;
  - Verification of invoices (correct name, address, identification information and bank account of the payee);
  - Check if the payee's information in the invoice is the same as in the contract and previous payments;
  - Check if the payment request fits the payment schedule/milestones in the contract;
  - Check if the appropriate percentage recovery of the advance payment has been deducted;
  - Availability of funds and applicable payment method (payment from Special Account; Direct Payment; Special Commitment for Letters of Credit etc.);
  
- **Time control**
  - Check compliance with delivery schedule or activity milestones in the contract;
  - Actions to speed up progress and ensure compliance with contractual time for completion;
  - Application of liquidated damages for delay.

- **Remedies against non-performing contractors:**
  - Deny approval or acceptance of non-compliant goods, defective work, sub-standard materials or incomplete deliverables;
  - Rejection of non-performing staff (in civil works and consulting contracts);
  - Penalties for failure to meet functional guarantees;
  - Actions against the Performance Security;
  - Termination of Contract.
  
- **Acceptance / Taking Over Certificate**
  - Check if all the functional guarantees are met and all tests on completion have been successfully passed;
  - Acceptance of goods (check against delivery lists and technical specifications) and services (check if all comments and recommendations have been incorporated in the Final Report);
  - Inventorying procedures;
  - Succession planning (who takes over the goods or the works; do they have funding for the proper care and maintenance; do they know what to do in case of defects or claims during the warranty period etc.).
  
- **Warranty / Defects Liability Period**
  - Ensure that Performance Security/Retention Money Bank Guarantee and insurance policies (where applicable) are still valid and enforceable for the duration of the warranty period;
  - Ensure that the contractor is promptly notified about any defect and duly remedies the defects in due time.
  
- **Final Acceptance / Performance Certificate**
  - Check how the Contractor fulfilled its duties during the warranty period;
  - Ensure the Contractor has no outstanding obligations, duties or debts;
  - Release Performance Security/ Retention Money Bank Guarantee;
  - Final Payment (if applicable).
  
- **Termination of Contract**
  - Check the exact provisions of the Contract with regard to the Termination by the Employer;
  - Assess Contractor's claims and remedies;
  - Ensure that all Contractor's reasonable claims have been properly addressed and all due amounts have been paid;
  - Contingency planning.
  
- **Claims and settlement of disputes**
  - Check the exact provisions of the Contract with regard to the settlement of disputes and costs incurred (in terms of time, money and resources);
  - Check if the contract management team has consistently and correctly enforced the conditions of contract;
  - Duly document Contractor's deviations from the specifications and conditions of contract (very important for later arbitration/adjudication procedures or to defend Employer's case in court).



## 14. Poor and/or fraudulent Contract Management

A badly managed contract occurs when the contract management team fails to act (proactively or reactively) in order to keep a firm control on the contract implementation. This usually results in at least one of the following:

- *Scope of contract is not achieved (the end product is either not delivered, or has a very poor quality);*
- *Delays;*
- *Cost overruns.*

The worst case scenario is a situation where all these three situations described above are met (the contract does not achieve its objective and ends up with time and cost overruns).

The most frequent causes of badly managed contracts are often linked

- (i) To the capacity of the contract management team (can't); or
- (ii) To its willingness to act according to its mission and purpose (won't).

Poor capacity, while dangerous for the contract implementation, can be remedied through continuous and intensive training (both formal and on-the-job); hiring staff with the appropriate expertise and experience; and through close supervision. Consequently, the negative effect of lack of capacity can be successfully mitigated, especially if the issue of capacity is addressed at an early stage during contract implementation.

Lack of willingness to act in the best interest of the contract can have two major causes, which are radically different from an ethical perspective, but can be equally damaging to the success of contract implementation:

- *The first cause (which is more benign and thus potentially less harmful) has to do with the lack of motivation of the staff. This can also have many causes: dissatisfaction with the level of remuneration; lack of professional challenges; eroding routine; lack of recognition from the superiors; sense of futility etc. These symptoms must be identified early in the implementation stage and properly addressed through appropriate management decisions (incentives; motivation; correct allocation of tasks and responsibilities; correlation between responsibilities and rewards; increased ownership of the process etc.)*
- *The second possible cause of staff inactivity has its roots in fraud and corruption and is therefore the most dangerous risk during contract implementation. Whenever corruption is involved, there is a high degree of certainty that the proper execution of the contract is compromised in one way or another.*

## 15. Management of major civil works contracts (FIDIC conditions of contract for construction)

The FIDIC Conditions of Contract for Construction have become the prevailing international standard for civil works contracts because they present a multitude of advantages over other forms and conditions of contract. They,

- cover in a clear and precise manner a lot of circumstances and events that may (and often occur) during the implementation of a civil works contract; and
- provide a clear image on the roles and responsibilities of each party. This why implementing agencies may favor the use of this type of contract even for smaller size assignments that would not normally “qualify” for this.

The FIDIC Conditions unite in one single document the roles and responsibilities of the three most important parties in a civil works contract, namely

- (i) The Employer;
- (ii) The Contractor; and
- (iii) The Engineer.

Not surprisingly (given the very sensitive nature of civil works, which are inherently prone to variations more than any other types of contracts) **the Engineer is the central figure of the contract and the main party to which contract management is formally assigned**. This derives from the fact that the Engineer is invested with the authority to act on behalf of the Employer in making sure that the works would be completed successfully (in terms of time and money spent).

One of the biggest mistakes in the management of civil works contracts is the belief that once you hire a competent Engineer all your troubles are over. But this is only true in exceptionally rare cases because an effective contract management requires a high degree of involvement from the implementing agency. There can never be a full and complete outsourcing of contract management, since **the implementing agency must retain critical key functions** within the process (at least final verification of documents and payment).

In large or complex contracts as well as in projects with many contracts with a wide geographical spread the implementing agency might also benefit from the expertise and experience of **third party technical auditors**. These can be hired as an additional layer of supervision responsible with checking how the contract parties (Contractor and Engineer, but also Employer) are fulfilling their duties and responsibilities toward the successful completion of the contract.

The presence of an additional layer of supervision (represented by an outer circle) should by no means be interpreted as a superior hierarchical position of a subordination nature; it merely indicates a greater scope of the supervision function. In simpler words:

- (i) The Engineer supervises the Contractor;
- (ii) The Employer supervises the Engineer and the Contractor;
- (iii) The auditor supervises the Employer, the Engineer and the Contractor.

## 16. Layers of supervision in the management of Civil Works contracts

The involvement of so many layers of supervision in the case of large civil works contracts is by no means an exaggeration. It must be fully understood that the management of this kind of contracts is not a part time job and not a task to be entrusted to one single party.

Purpose, Roles and Responsibilities of each of these layers are the following

## 16.1. The Engineer

### Who is the Engineer?

In the very strict understanding of the Conditions of Contract, the Engineer is a person. However, "person" should not be automatically deemed to designate an individual (a physical person) but rather a party. This means that the Engineer may be (and frequently is) a company invested by the Employer with the roles and responsibilities of the Engineer.

There are FIDIC Contracts where all the responsibilities of the Engineer are entrusted to one single individual. This should only happen in the case of simpler contracts with straightforward bills of quantities where variations are very unlikely.

Instead, usually the Engineer is a specialized consulting company that can mobilize various technical expertise because (as we have seen earlier) there are many different skills that are required in the implementation of a large civil works contract. Consequently, more than one single individual would be exercising various supervision functions at any given time – surveyors/topographical engineers; civil engineers; roads/bridges engineers; electromechanical engineers; hydrological engineers; environmental specialists; health & safety specialists.

So depending on the size, complexity or geographical spread of the works, the Engineer may actually designate an impressive number of staff (some of them full time, others part time experts).

But even in the case of these supervising companies, the contractual term "Engineer" designates the single individual person that has been delegated with the ultimate authority of supervision – team leader, leading engineer, site engineer, resident engineer, coordinating engineer or whatever job title the respective person might have. (All other personnel involved in the supervision of works are called "assistants" for the purposes of the Contract and specific tasks are usually delegated to them, according to their particular area of expertise.)

## 16.2. Advance payment / Contractor's mobilization

It goes without saying that no payment should be made to the Contractor until valid and duly verified performance security and advance payment guarantee have been submitted. Then the Engineer should issue the appropriate Interim Payment Certificate certifying that all conditions for the advance payment have been met.

The Employer should supervise Contractor's mobilization on site and use of the advance payment, because usually this is a fairly good indication on Contractor's later performance. Any delays or deviations in site mobilization (in quantity but also in quality – e.g. unacceptable accommodation or sanitary facilities) should be promptly notified to and remedied by the Contractor.

Contractor's mobilization should be seen as comprising at least the following key aspects:

- *Financial resources - if advance has been paid, than the Contractor should be able to timely complete the appropriate mobilization arrangements; or if advance has not been requested or paid, that means that the Contractor should have its own financing arrangements in place that would allow an adequate mobilization;*
- *Manpower - both in terms of Contractor's key staff and sufficient labor to ensure proper and timely execution of the works;*
- *Plant, equipment, materials;*
- *Site facilities – starting with proper fencing and securing the site; adequate site accommodation facilities for the Contractor's personnel and for Engineer's staff (if requested under the Contract); acceptable sanitary and hygienic conditions for all personnel; proper storage facilities for the sensitive plant, equipment and materials brought on site etc.*

There may be cases where the Contractor receives the advance payment but fails to mobilize up to the value of the advance payment or according to its own Mobilization Schedule (which should have been part of its bid). If it is obvious that the Contractor does not have the intention of making the adequate start up arrangements or uses the advance payment for other purposes than the mobilization costs, than the Employer would be entitled and should not hesitate to forfeit the advance payment guarantee, after due consultation with the Engineer, who should be in the best position to determine Contractor's capacity or intentions.

If everything goes according to the contract and the advance payment is properly used, the next task of Employer's staff (particularly financial specialists) is to ensure that repayment of the advance is done correctly by the Engineer through the Interim Payment Certificates that follow certification of 30% of the works.

### **16.3. Use of adequate project management tools for time and cost control**

Day-to-day supervision and follow-up on the progress of works are essential attributes of the Engineer, who should employ appropriate project management tools to ensure that critical issues such as time (actual progress of works against planned) and money (how much has been paid vs. how much has been done).

Many projects are badly managed simply because the supervisors are not familiar with basic project management tools and techniques that would allow them to hold a firm grip on the contract implementation. Employer's technical staff should equally be conversant with these tools. The following are the most widely used such instruments and have evolved in industry standards throughout the years:

- *Work Breakdown Structure (WBS);*
- *Program Evaluation and Review Technique (PERT);*
- *Critical Path Method (CPM);*
- *Gantt Chart;*
- *Earned Value Management (EVM).*

Engineer's records should always be reflected in these monitoring instruments which if correctly maintained would constitute a "mirror" of the project that can show at any given time the

actual progress achieved as compared with the planned schedule (both in terms of physical output and money spent).

## 16.4. Site visits by the Employer

One of the key responsibilities of the Employer throughout the implementation of the contract is to maintain a close control on what actually happens on site. This cannot effectively be done without inspecting the Site as often as necessary. Employer's technical experts should be actively involved in the site visits that would facilitate better understanding of the progress of works.

Whenever visiting the Site, Employer's staff should bear in mind the following minimum aspects that relate to visual or physical inspection:

- *Progress of works against planned (how much of the work has been done, compared to the planned progress?);*
- *Quality of works (do all works comply with the quality requirements in the technical specifications?);*
- *Deployment of staff / labor (is the number of people actually working on site sufficient to have the works completed on time?);*
- *Contractor's mobilization of materials and equipment (does the Contractor have all necessary equipment and construction materials to complete the works according to the specifications and on time?);*
- *Health and safety with regard not only to the Contractor's personnel, but also to the public safety (have all necessary health and safety measures been implemented?);*
- *Environmental issues (is the Environmental Management Plan being enforced appropriately?).*

Another important aspect would be the desk control of Engineer's documents. The Engineer should maintain very accurate records of everything that happens on the Site. The following documents should be the minimum required:

- *Measurement logs – the cornerstone of FIDIC Contract is that all quantities should be re-measured by the Engineer and payment to the Contractor should be made only for the quantities actually measured (that often differ from the quantities in the Contract);*
- *Activity reports– daily, weekly, monthly; showing in tabular format quantities of work done, number of staff and equipment involved, consumption of materials, testing and samples etc. The reports should also mention any specific events, incidents, weather conditions etc.*
- *Issues Log – a record of all issues that occurred during the execution of works, with appropriate description and indication of the date, cause, remedial measures to be taken, responsible party, status of remediation etc.*
- *Variation Orders – critical documents that justify changes in quantities, prices and time for completion.*
- *Requests to Contractor.*
- *Correspondence with the Contractor and third parties (Government agencies, local authorities, controlling bodies, end users, beneficiaries etc.)*
- *Inspection and Control Logbook – a record of all inspections, audits and controls performed by any party starting with the Employer, but also any third party (environmental agency, financial control, local authorities etc.)*

## 17. Variations

Changes in quantities of works occur in virtually any civil works contracts for a variety of reasons (quantities could not be accurately measured at the time of design, modifications of the conditions on site etc.).

Variations are therefore not only normal in a civil works contract, but also necessary to correct shortcomings in the design, to improve the proposed technologies, to allow for the use of newer or better materials etc. As long as they are carefully analyzed and duly justified from a technical and economical perspective, variations should not be regarded as attempts of the Contractor to get money in dubious ways.

The Engineer is again the most important player in this equation because it's the Engineer's duty to make sure that the variations requested by the Contractor are (i) necessary; and (ii) make technical and economic sense. The next step would be to evaluate the financial impact of the respective variations and duly inform the Employer about it. Depending on the limits of Engineer's authority established in the Particular Conditions, the Employer should approve the variations that exceed the respective threshold.

The following main issues should be considered when analyzing a variation:

- *Check if it's a variation or a mere change in quantities following re-measurement (according to FIDIC, changes in quantities are not necessarily variations);*
- *Verification of supporting documents (how appropriate or necessary are the proposed variations);*
- *Check how the variation was valued (i.e. existing contract rates were correctly used; new rates were correctly constructed based on fair market prices etc.);*
- *Check if a change in unit rates would be appropriate or required according to the Contract;*
- *Check if the time impact (extension of time for completion) was correctly assessed and is duly justified;*
- *Check the level of approval (Engineer or Employer);*
- *Check if the variation doesn't require an appropriate amendment to the Contract (all variations that determine changes in unit rates, bill items or in the scope of works should be included in contract amendments).*

The All the above represent a minimum checklist for Employer's technical and procurement staff.

## 18. Payment

Payment of the Interim Payment Certificates issued by the Engineer based on Contractor's monthly statements is one of Employer's key responsibilities and also the moment with the maximum involvement of its technical, procurement and financial staff.

The review and approval of payment applications should imply the following:

- Existence of a well-established mechanism for the verification and approval of payment documents – internal audit, four eyes principle etc.
- Verification of unit rates, prices and quantities;
- Verification of supporting documents (invoices; interim payment certificates; monthly statements; actual re-measurement; timesheets; proofs of actually incurred expenditures etc. as applicable);
- Existence of required approvals (duly certified monthly statements and interim payment certificates; signed timesheets; Engineer's approvals etc.);
- Price adjustment – applicability; verification of indexes (base values, correct reference to applicable indexes) and weightings (for materials, labor, equipment);
- Use of Provisional Sums and contingencies - check if their use was appropriate or necessary (requests and/or approval from the Engineer);
- Check if the requested amounts have not been already paid;
- Verification of invoices (correct name, address, identification information and bank account of the payee);
- Check if the payee's information in the invoice is the same as in the contract and previous payments;
- Check if the payment request fits the payment schedule/milestones in the contract;
- Check if the appropriate percentage recovery of the advance payment has been deducted;
- Availability of funds and applicable payment method (payment from Special Account; Direct Payment etc.)

## **19. Remedies against non-performing contractors**

- Deny approval or acceptance of non-compliant goods, defective work, or sub-standard materials;
- Rejection of non-performing staff;
- Penalties for failure to meet functional guarantees;
- Actions against the Performance Security;
- Termination of Contract.

## **20. Acceptance / Taking over Certificate**

- Check if all the functional guarantees are met and all tests on completion have been successfully passed;
- Succession planning (who takes over the works; do they have funding for the proper care and maintenance; do they know what to do in case of defects etc.).

## **21. Warranty / Defects Liability Period**

- Ensure that Performance Security/Retention Money Bank Guarantee and insurance policies (where applicable) are still valid and enforceable for the duration of the Defects Liability Period;

- *Ensure that the Contractor is promptly notified about any defect and duly remedies the defects in due time.*

## **22. Final Acceptance / Performance Certificate**

- *Check how the Contractor fulfilled its duties during the warranty period;*
- *Ensure the Contractor has no outstanding obligations, duties or debts;*
- *Release Performance Security/ Retention Money Bank Guarantee;*
- *Final Payment (if applicable).*

## **23. Management of Supply Contracts (Goods)**

The This Section contains information on the management of contracts for the procurement of goods.

Reference is also made to particular contract management issues that are specific to

- *Supply and installation of plant and equipment;*
- *Plant design, supply and installation;*
- *Supply and installation of information systems;*
- *Procurement of non-consulting services.*

The There are several types of contracts for the procurement of goods used, according to the nature of deliverables (pure supply of goods; supply and installation of plant and equipment; plant design, supply and installation; supply and installation of information systems etc.) but also according to the cost estimate (and appropriate procurement method). Non-consulting services (or technical services) are also considered to be "goods".

From the contract management perspective, the contracts for the procurement of goods may be divided into two broad categories:

- *Contracts where a particular Project Manager is designated (e.g. supply and installation of information systems; supply and installation of plant and equipment etc.);*
- *Contracts where the Purchaser is entirely responsible with the contract management and supervision (supply of goods).*

For the first category, the contract supervision authority of the Purchaser is mostly transferred to the designated Project Manager (similar to the case of the Engineer or Project Manager in civil works contracts).

For the sake of concision, we will refer to the Project Manager whenever we mention the most important actions and steps to be taken during the management of goods contracts. It is understood that when the Project Manager is not formally mentioned in the contract, these roles and responsibilities should be assumed by the Purchaser through its authorized representatives.



## Practical Example

### Best Practices in Contract Management – Goods delivered at multiple sites

Here are examples of best practices identified in some projects involving the supply and installation of IT equipment at multiple sites (local schools):

Acceptance certificates of the goods by the end users included the following information:

- detailed list of all deliverables (hardware and software);
- every piece of hardware identified by its type/description and by its own unique serial number;
- every software license identified by its code/key;
- detailed report on every acceptance test performed;
- report on training delivered to individual end users;
- date of acceptance;
- expiration date of the warranty period.

Inventory list included:

- detailed list of all deliverables (hardware and software);
- serial number (for hardware);
- software code/key;
- the end users' own unique inventory number;
- location (room no.) and user name.

This way, all equipment can easily be tracked down and identified from other (older) equipment.

Succession planning:

- all individual end users are trained and qualified to use and operated the hardware and software;
- all individual end users are informed about the warranty conditions (duration, coverage, Service Level Agreement, contact information of the service provider) – any defect can easily be reported to the service provider and remedied as per the conditions of the SLA;
- remedies against non-performing service provider – claims under the performance security;
- comprehensive plans for equipment and software upgrade; maintenance after the expiration of the warranty period; maintain Internet connection;

## 24. Warranty

- *Ensure that Performance Security for the reduced amount has been submitted and is valid and enforceable for the duration of the warranty period;*

- *Ensure that the contractor is promptly notified about any defect and duly remedies the defects in due time (enforce the conditions of the Service Level Agreement in the case of contracts for supply and installation of information systems);*
- *Check how the supplier fulfilled its duties during the warranty period;*
- *Ensure that the supplier has no outstanding obligations, duties or debts;*

## **25. Procurement of Non-Consulting Services**

The notion of "services" is usually and naturally linked with the consulting services. However, not all services are consulting services because there is a multitude of services that are not intellectual or advisory by nature. All these services have one common feature: they produce a measurable output, which brings them closer to the procurement of goods or works rather than to the selection of consultants. This is why the Bank makes a clear distinction between consulting services (which are purely intellectual and have an advisory and rather immaterial nature) and non-consulting services (which have a more material, measurable output).

Similar to the case of consulting contracts (where we have time based contracts and lump sum contracts) or civil works contracts (admeasurement contracts based on bills of quantities and lump sum contracts based on activity schedules), non-consulting services can be procured using two types of contracts:

- *Lump sum contracts, based on activity schedules similar to those used in CW contracts. But unlike their CW counterparts, the lump sum contracts are the most commonly used when contracting non-consulting services (for services which are well defined and are unlikely to change in quantity or specification, where encountering difficult or unforeseen site conditions are unlikely and where the risks of substantial design or performance variations are minimal). The contract is split in milestones or activity schedules and payments are made on the basis of percentage completion of each activity.*
- *Time based contracts have also been developed to serve the needs of procuring non-consulting services where certain conditions may lead to variations of the intended output of the contract.*

Regardless of the type of contract used, the most important challenges and issues related to the management of non-consulting contracts are the following:

- *Ensure that the Service Provider maintains qualified staff in key positions throughout the implementation of the contract (replacement of staff is governed by an approval procedure similar to the one used in consulting contracts);*
- *Ensure that payments are always linked with the actual progress or with the appropriate percentage completion of the activities/milestones;*
- *Enforce the contractual penalty for lack of performance if the Service Provider fails to remedy a defect within the time stipulated in Employer's notice;*
- *Ensure that any additional services are valued and paid based on the unit rates and prices included in Appendices D and E or based on the Day works rates quoted by the Service Provider, if applicable.*

## 26. Management of Contracts for Consulting Services

This Section contains information on the management of contracts for consulting services (time-based and lump-sum; complex as well as small assignments).

The management of consulting contracts requires specific skills and actions due to the “soft” and intellectual nature of the deliverables. The absence of any concrete, “hard” deliverables (like in the case of goods or civil works) puts many Clients in difficulty when managing these types of contracts.

Consulting contracts are grouped according to the type of measuring the deliverables:

- *Time based contracts – used for complex assignments for which payment to the Consultants is being determined on the basis of the time actually spent by the Consultants in carrying out the services;*
- *Lump sum contracts - used when the definition of the tasks to be performed is clear and unambiguous, when the commercial risk taken by the Consultant are relatively low, and when the Consultants are prepared to perform the assignment for an agreed predetermined lump-sum price;*

As far as the actual contract management is concerned, Clients rarely use a third party for the management and supervision of consulting contracts (like in the case of Engineer or Project Manager for civil works or goods contracts). The contracts provide for the Client's Coordinator to manage the contract on behalf of the client. This position could be assimilated to that of the Project Manager.

## 27. Project Management Tools

All complex assignments require the use of proper project management tools that enable the contract management team (Employer, Engineer, Project Manager etc.) to monitor the physical progress of the contract against the planned schedule and also against actual payments made.

Project management tools are particularly important for the implementation of civil works contracts and for complex supply and installation contracts. However, the basic principles can be universally applied to any contract, regardless of scope or complexity (even for consulting services).

There are many project management tools and software programs that are extremely useful for the contract management team. This section briefly presents the most widely used such tools.

**Project Management (PM)** is the process of planning, organizing and managing resources towards the successful completion of the project.

- *The first objective of project management is **to achieve the project goals** and objectives while observing the constraints in terms of scope (quantity and quality), time and budget (cost);*

- *The second objective of project management is **to optimize** the allocation and integration of inputs necessary to meet the project goals and objectives.*

## 28. Basic Project Management Tools

- **Project Schedule** illustrates the start and finish dates of the entire project but also of the individual elements (milestones) of the project;
- **Work Breakdown Structure (WBS)** is a tool used to define and group a project's distinct work elements in a way that helps organize and define the total scope of the project;
- **Cost Breakdown Structure (CBS)** is a breakdown of the costs of the project, which serves as a basis for the scheduling of payments (monthly or by milestones);
- **Earned Value Management (EVM)** is a tool used to keep track of the actual progress versus project schedule and versus the payments actually made.

## 29. Reference

- EFDRE Contract Law, \_\_\_\_\_
- FIDIC Conditions of Contract for Construction MDBHE, June 2010
- GCC of FPPPA and World Bank Standard Bidding Documents for Goods and Works and RFP