



Social inclusion through choice of construction contract

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THE TYPE OF CONTRACT used on construction projects is normally selected for technical or administrative reasons. A novel approach to protect springs in Southwest Uganda was not only successful technically and administratively, but also proved to be more socially inclusive, involving disadvantaged groups of people, especially women.

Background

Phase IIB of the Ugandan Small Towns and Sanitation Project, funded by the Directorate of Water Development through a World Bank credit, aimed to provide water supply and sanitation services to six small towns. The provision of water was envisaged to include a reticulated supply for the centre of the town with a variety of point sources in peri-urban areas. The Project Guidelines stipulated community involvement in the planning and operation of the water supplies, but also stated that the majority of the construction was to be let by international tender. The project team, led by Mott MacDonald, in conjunction with Kagga and Partners and the Environmental Health Consulting Group, examined the options for procuring the peri-urban supplies ahead of the main urban contracts. This would provide project outputs ahead of the main water supply system and thus:

- spread the site supervision over a longer period, reducing burdens on the project staff;
- demonstrate a commitment to the project, encouraging local support;
- improve the water supply to parts of the town; and
- provide early experience for both the project team and the community in managing the water supply.

Social inclusion

The Project Guidelines stipulated community involvement, especially in the management of the water supply systems. Active stakeholder participation was limited to a requirement to involve women from the community. This was mainly demonstrated by the requirement to have a minimum number of women on each water user group.

Technical options

The peri-urban point water sources included:

- protected springs;
- shallow boreholes; and
- deep boreholes.

These are listed in the order preferred by the project team, based on the ease and cost of construction, operation and maintenance. Boreholes were considered only if there were no suitable springs that could be accepted by the community. The first water supplies to be constructed were therefore the protected springs. If more detailed investigations proved that a spring was not viable, then another technology could be used.

Construction options

Initially, the way the construction project was to be implemented was a choice between two very different options.

Large contractors

The “engineering” approach was to use a contract based on the Institution of Civil Engineers standard conditions of contract, which include a contract document, a specification, a bill of quantities and a set of contract drawings. This would involve a detailed survey of each spring site and continued supervision of the work during construction, re-measuring all the quantities of work.

None of the project towns had contractors able to carry out this amount of work and manage the amount of administration necessary. Contractors would have to be engaged from either the regional centres of Masaka or Mbarara or the capital, Kampala.

The contracts would be let via the District Tender Board. Although this method was transparent, each tender round would cost US\$ 1,500,000/= (£1,000). Applicants would also have to pay US\$ 30,000/= (£20) to receive documents. This would rule out smaller contractors with limited cash flows. The procedures also took a long time, due to the time taken to advertise, collate bids and for the Tender Board to sit and award the contracts. This reduced the flexibility of this method. The contracts would have to be let as packages of all the springs in a town, or perhaps grouping two or more towns together, to minimise the costs and the time taken in tendering.

A local UNICEF project had modified the District Tender Board approach, with the District Water Officers carrying out the role of the tender board.

Supervised voluntary labour

The sociologists preferred to promote a community-based approach to construction. A spring protection project had been successfully running for several years in the area

around one of the towns. This was jointly managed by WaterAid and the Rukungiri Diocese of the Church of Uganda. This was a demand driven programme where the community had to apply to the organisers for assistance. Following a visit by a project officer to assess the site, the community would have to provide

- local materials (sand, gravel, stones and clay);
- food and accommodation for the project mason;
- unskilled labour;
- US\$ 26,500/= (£17) to cover half the mason's wages;
- a commitment to look after the spring; and
- an undertaking to take part in a health education session.

The spring would be constructed by a mason employed by WaterAid, with transport, the balance of the materials and supervision provided by the project. The project had 12 trained masons, completing about 360 springs annually in rural areas. Each spring took between a week and three months, depending on the conditions and the commitment of the community.

Choosing the construction method

Neither of the two options appeared entirely satisfactory. The choice of a large contractor would involve a large amount of design preparation and construction supervision but potentially could produce a good product. However, the skills needed to repair the spring would remain outside the community. The community would not be involved in the construction process. Any minor amendments to the design requested during the construction process would result in variation orders and additional cost. This option would exclude local small contractors and take time to implement.

The community-based option also had its problems. The peri-urban community was different socially and economically from the rural community in which WaterAid was operating. The peri-urban areas were more diverse, with poor and affluent people living in close proximity. The economy was mixed, with some people involved in formal employment and a cash-economy, whilst others had a less formal arrangement with subsistence farming and casual work. Shop owners were probably going to be less enthusiastic or able to help build a spring. This would have put more work onto the people who worked outside the cash economy. Many of the local residents were also tenants, and did not feel that they should contribute to a project that would benefit their property owner. WaterAid had protected one spring in the peri-urban area and this had not been managed well since its construction.

Small-scale contracting

The use of standard contract procedures and large contractors is appropriate for large towns. The use of voluntary labour is suited to rural areas. The small towns that this project was working in were a hybrid of these extremes. It was neither a cash based or cash-less economy. The towns were not large enough to support a professional water

supply company, but they were too large to engender a community spirit that would permit a voluntary approach. The project team therefore developed a method, based on the two existing procurement models.

The procurement was designed around the masons who currently worked for WaterAid. The WaterAid project was being reviewed at the time and no fieldwork was being undertaken. The masons were used to organising materials and labour, but had no experience of tendering processes. The trial procurement process was as follows:

- The construction was advertised locally, calling for interested masons to attend an open day.
- The open day explained the project and the tendering process. The tender form and contract were described. All the prospective contractors were taken to a well-built spring, where the main details were pointed out.
- In towns where there was little experience of constructing well built springs, a training course was run. This involved a day in the classroom followed by three days protecting a spring and using this as the 'specification' for the project. Masons had to attend the course in order to be allowed to tender. There was no charge for the course, but the project did have free labour to protect a spring. This course involved private (consultant and masons), public (district and national water officials) and NGO (WaterAid trainers) in partnership.
- Where there were experienced masons, so no training course was required, the contractor had to provide evidence of his standard of work (e.g. a letter from WaterAid or the district water officer).
- Tenders for springs were let individually, with about five contracts being tendered at any time. This balanced the need to make efficient use of project staff, who could supervise several springs at any time, with the limited number of masons able to carry out the work.
- The specifications were simply written, with a page of text and a sketch explaining the construction of a protected spring. This summarized the information given on the open day or training course. For each spring there was a sketch map showing the location of the site and a payment schedule. This schedule was used instead of a bill of quantities, as it was easier to administer and would lead to fewer disputes than a re-measurement contract. Payment was given at various milestones, including one at the start of the contract to help the mason buy materials. The milestones were based around the main stages of construction and would only be paid once that stage of the work had been inspected and accepted by the engineer. This was designed to help the masons manage their cash flow. No quantities were given in the payment schedule. The experience of the masons enabled them to work required before tendering.

The contract itself was only three pages long, including the payment schedule. The tender had to be signed by a 'responsible person' such as a councillor, priest or mullah.

Table 1. Payment milestones

| Item | Cost | Paid | Work finished | Payment received |
|--|------|--|---------------|------------------|
| Starting money* | † | When contract is awarded | †† | †† |
| All materials | | When materials are on site and have been inspected | | |
| Digging to expose the spring | | When digging finished and the hole has been inspected | | |
| Filling the hole with gravel | | When filling finished and has been inspected | | |
| Building wall and platform | | When masonry work finished and has been inspected | | |
| Digging ditch, planting hedge and clearing drain | | When finished and inspected | | |
| Final payment** | | One month after everything has been finished and inspected | | |
| Total | | | | |

* no more than 20% of total cost

** at least 20% of total

† Cost to be filled in at tender stage

†† Last two columns signed by engineer and contractor at each milestone

This sponsor would act as an arbitrator in the event of a dispute. The contracts were submitted to the town council offices, where they would be assessed by the project team. The tenders were awarded competitively, although quality of work and experience were taken into consideration.

Contact documents were charged for, just as in the District Tender Board system. The charges however were limited to the costs of reproducing the documents, about USh 500/= (£0.30).

Results

Contracts

The first five contracts were let as a test. The springs selected were the simplest to protect. A member of the project team was present throughout the tender period to answer questions. The range of tender prices varied widely, with some less experienced tenderers underestimating the costs of the work.

Over forty separate contracts were let in two towns. The variation in tender prices apparent in the first tender round quickly reduced, as competition between contractors was refined and their experience in estimating the costs increased. Figure 1 shows how the variation in bids reduced over the first 5 tender rounds (5 springs in each round, with about 6 bids for each spring). The tender price appears reasonably constant over this period, but as the springs became more difficult to construct, the work involved increased, so a real fall in price was apparent. Difficulties included the demolition of existing spring structures, the provision of storage tanks to increase the water available from springs with low yields and springs where the site meant that larger than average excavations were required conditions.

The cost of the springs was significantly less than those constructed under phase IIA of the same project, where the springs had been built by a large commercial enterprise.

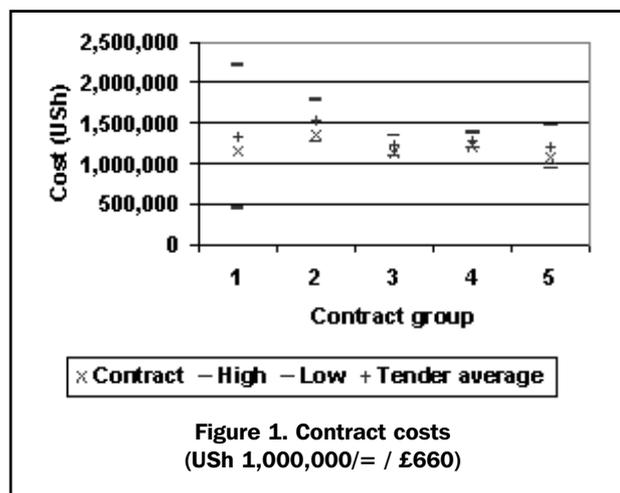


Figure 1. Contract costs (USh 1,000,000/= / £660)

Anticipated impacts

One of the benefits was the training of a group of local masons capable of maintaining the spring in the future. The funds spent on the springs were also spent locally, increasing the benefits to the town. This tangible method of maximising project outputs locally supported the other activities of the team working on the main water supply.

Unanticipated impacts

The contract form was surprisingly successful. The dispute procedures were not used on any of the contracts. Where standards were initially not acceptable, the issue was resolved between the engineer and the contractor. The continuing workload ensured high standards, as poor quality or slow progress would be taken into account at the next tender round. Some variations were agreed by the engineer, where site conditions were unexpected.

The employment of local people to carry out the construction stage was intended to keep the money within the

town. The practice actually went beyond this initial aim, with much of the money being spent in the area around the spring. Manual labour and local materials were sourced from the community. Much of this work was carried out by women, who also carry out much of the subsistence farming in this area. This not only provided employment and an income to local people, but also involved them in the construction process. Compared with the alternative of a large contractor, this method enabled the local community to be involved with another stage of the project, rather than just being recipients of a construction project.

This involvement also led to the local community taking on a supervisory role, ensuring that the work was carried out satisfactorily and to their requirements. In one case, the mason employed people from another part of the town who did not have the local knowledge to easily obtain materials, were less committed to the work and did not have the same level of support from the community. On the suggestion of the supervising engineer, local residents were employed and the progress improved.

The success of the protected springs encouraged some other water user groups to change their preference from a borehole to the simpler and cheaper spring option.

One problem was that the springs were completed in advance of the training of management committees. The majority of the training was being directed at the urban centres, so the advance procurement of the springs meant that the committees responsible for each water source had not had an opportunity to set tariffs and organise payment structures before the work was completed. However, some committees took the opportunity of an improved water supply to sell water to people outside their immediate area, thus generating funds.

Gender

The programme guidelines stated that the project should

“... ensure that the gender issue is addressed in such a way that both sexes are involved as decision makers; women are empowered and enabled to determine their own development collectively with men; and women are involved as agents of change and not just beneficiaries”

This directive had only been interpreted as ensuring women were adequately represented on any management committee, by setting quotas. This however limited involvement to educated, articulate women. The separate aims of the technical and socio-economic members of the project team had not included the possibility of involving women in the engineering aspects of the project. This was despite the fact that women traditionally worked in subsistence farming and building in this part of Uganda.

This novel approach to procurement provided informal employment for the poorer members of society, especially women. This included the provision of materials such as gravel and building stones as well as providing labour.

The contractors were not exclusively male. Several women entered into joint ventures with men to tender for and win contracts. Some women administered the projects whilst the men carried out the construction.

Conclusions

Engineers normally consider issues such as contract administration and design details to be a separate issue from the socio-economic aims of projects. This case study demonstrates a form of contract selected to:

- support subsequent maintenance stages of the project through training and capacity strengthening;
- mobilize site work quickly;
- reduce administrative and design burdens; and
- minimize disputes.

However, it also produced unanticipated benefits. The “engineering” benefits included:

- reduced contract cost;
- no claims;
- a “design and build” approach by the contractors, altering the design to each individual site and enabling innovation in the designs.

The socio-economic benefits included:

- early provision of water supplies;
- project funds being spent within the community;
- involvement of women and men from less advantaged social groups;
- involvement of women in a core aspect of the project, without quotas;
- greater sense of ownership through members of the community being involved in the construction process;
- tendering procedures that were understood by and transparent to the community;
- promotion of the project through outputs rather than meetings and posters.

This project demonstrated that, through communication and dialogue within the project team and with other stakeholders, engineering activities could be targeted so that, not only are the technical issues addressed, but socio-economic aims can be successfully met.

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