

Bridging the gap in the construction sector

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Abstract — Capacity building in the South African construction industry remains a massive challenge, especially with the government's radical transformation policy. The supply chain process of choosing the lowest bidder places massive strain on construction projects, as marginal profits are being provided to keep the companies afloat and resources committed to projects. Construction projects end up being managed by the least experienced personnel (often graduates) because companies cannot afford to allocate their experienced resources since they tender too low and as a result they are obliged to fund those projects from their own pockets. This has a massive impact on the overall execution of projects.

The model was initiated in conventional projects for the road construction due to the need of assistance and involvement of targeted enterprises. The main objective of the model is to ensure that the client, consultant and contractor's interest is provided for by means of making sure that the project is running in accordance with the requirements of government stipulated in the project documents. This creates an opportunity for graduates to learn and grow technically based on the exposure and challenges experienced in the industry.

The model promotes and creates an opportunity for graduates to become Engineer's Representatives for Targeted Enterprises (ERTEs) on site. They manage the Small Medium Micro Enterprises (SMMEs) (ensuring that SMMEs know their rights), look after the SMMEs well-being on site, prepare and groom the SMMEs to become independent business owners or recognized contractors and also assist technically. The graduates may register with Engineering Council of South Africa (ECSA) after acquiring the necessary ECSA requirements.

The aim of the programme is to train and develop graduates, and concurrently the SMMEs are reaping the benefits of having these graduates who understand the objectives of the programme which is to provide skills programme's that are cognizant of the socio-economic realities of our communities and quality assurance. With proper guidance and mentoring such a program brings much hope.

Keywords — radical transformation, capacity building, skills transfer, ERTEs, SMMEs

I. INTRODUCTION

The gap to be bridged between the inexperienced and the experienced is based on how the contractor, consultant and the ERTEs complement each other in terms of their roles in making the project a success during construction phase.

Based on radical transformation, the Southern African National Roads Agency Limited (SANRAL) as an asset and government sector has been adopted by the government mandates of developing the country. The increased demands of meeting the high CPG targets require a new approach on construction sites. Finding that balance between the technical expertise and the social aspect of the project is becoming critical to the success of any project. These graduates are seconded to site under the Engineers to assist with the CPG targets set out on contracts as the government requirement.

The Construction Industry has a particular responsibility to effect change, not only in offices but on construction sites too. Due to budget constraints, competitive markets or lack of projects, companies have cut budget meant for the training and development of graduates.

There is a lack of interest in capacity building and skills transfer. The few companies that still value and invest in training and development thus encounter challenges in gearing the experienced site personnel to fully understand the new requirements so they can guide the new generation. It is very discouraging to see university graduates entering a working environment that they are not prepared for. This is a result of not having mentors to guide them in the early developmental stages of their career.

Due to the new requirements processes are longer, there are more personnel on site, demands from communities have increased and social facilitation is a necessity to ensure that projects run accordingly. Finding that balance between technical expertise and the social aspect of the project is becoming critical to the success of any project.

The increased demands of meeting the high CPG targets require a new approach on construction sites. This is where

the Engineer's Representative for Targeted Enterprise emerged.

II. THE LIFE EXPERIENCE OF AN ERTE IN THE INDUSTRY

The primary objective of having graduates on site is to ensure that the CPG process on a project is managed properly and continuously monitored. This allows full maximization of project objectives towards the affected communities. It also ensures that government objectives are being addressed and achieved.

The ERTes ensure that the contractor fulfills their role, the procurement process of the targeted enterprise is handled fairly and transparently, and everything is done according to contract. All issues between the main contractor and the targeted enterprise are addressed on site before they can escalate into a protracted dispute that can result in strikes and the disruption of the project. Targeted enterprises, being new to the industry, need to be guided and monitored on a daily basis.

This group of graduates may be registered with the professional bodies after obtaining all necessary training and exposure required.

Numerous workshops are attended by ERTes before any activity on site takes place, so as to make them fully aware of every detail concerning the project. The ERTes support functions on site includes the following:

- Monitoring targeted enterprise documentation validity (i.e. Tax, CIDB, and Letter of Good Standing).
- Reviewing, if necessary, pre-qualification documents.
- Reviewing targeted enterprises' tender documents.
- Reviewing targeted enterprises' contract documents.
- Completing a commencement checklist before any Targeted Enterprise commences.
- Assisting with quality assurance of work done by Targeted Enterprises if and when necessary.
- Assisting with the well-being of the targeted enterprises and labourers under targeted enterprises.
- Reviewing and co-signing daily diaries of all the targeted enterprises on site.
- Monitoring targeted enterprises' production rates and performance.
- Verifying or assisting with measuring and recording of quantities.

- Monitoring of all delays affecting Targeted Enterprises.
- Attending meetings – site meetings, technical meetings and any other required meetings correlated with the targeted enterprises issues.
- Assisting in monitoring compliance with Occupational Health and Safety (OHS) practices on site.
- Monitoring targeted enterprises' payments by main contractor as well as payment to labour.
- Ensuring all targeted enterprises pay correct legislated labour rate.
- Monitoring the Contract Participation Goal (CPG) progress.
- Reviewing quantities and payment certificates.

III. THE PROCUREMENT PROCESS DONE BY ERTES

(a) Pre-qualification process

Pre-qualification is a procurement process for the appointment of targeted enterprises from the specified designated areas for tendering. The pre-qualification process is aimed at developing small contractors from targeted areas by extending substantial opportunities to locals with preference to the disabled, youth and women. The evaluation is based on the validity of the tenderers documents, CIBD certificate, B-BBEE score card, SARS Tax Clearance Certificate, location of business etc.

(b) Tendering

The pre-qualified targeted enterprises are then shortlisted to tender, where evaluation is based on their prices and validity of documents. Prior to the targeted enterprise being appointed after tendering, the ERTes reviews and confirms quantities and rates for each package, by comparing with other projects and the industry as a whole. Not only does this assist in checking fairness of rates but it also assists in ensuring that the value of the package given to the targeted enterprise is structured in a way that will enable them to pay their labour, make profit to run the business and upgrade to a higher CIDB grading. Training is arranged for 1-2CE before they could tender and or before they commence with their work.

IV. CHALLENGES WITHIN THE INDUSTRY

(a) Model not accepted and ERTEs roles not fully understood

It has been, and still is, a mission to get the model accepted by the civil engineering industry. People fear change and shifting existing mindsets remains a big challenge. Not being given a chance and platform to introduce a new concept has been the worst experience for ERTEs.

This is an opportunity to address some of the industry's challenges yet ERTEs are not fully utilized on some projects and are still being sidelined. Projects where ERTEs have been well accepted and seen as support tool on site have yielded great results.

“This new model of Engineer's Representative for Targeted Enterprises is really working in our favour. The whole site team, from contractor's view, is very impressed with the impact that they had on the SMMEs development as we all know that working with Targeted Enterprises (SMMEs) is not something easy, they really need someone who is competent and who understands the challenges”. This is one of the comments made by one of the well-established contractors' site agent who have fully accepted the ERTEs role.

The model will not work if the parties on site are not working together as a team and there is no system in place. What makes this model work is the fact that the roles and responsibilities of the ERTEs were understood by all parties on site and they received full support. The ERTEs were given a chance to work closely with the contractor and engineer's staff and all matters that arose were resolved immediately. A plan was thus agreed upon, daily feedback was provided and all the necessary adjustments were made immediately.

This also creates a healthy working environment because the community, targeted enterprises and labourers felt recognized due to the fact that they were being attended to technically, emotionally and socially. Most problems that could have slowed the progress of the project were not allowed to linger. In the end all parties were fully satisfied and trusted one another due to the working relations that were inculcated during the working phase.

The most important aspects of this model are to involve all relevant stakeholders, be transparent so that when challenges occur, they could be resolved easily.

(b) ERTEs being undermined

It is so easy to undermine ERTEs and look down on them because they are university graduates with little experience, but is what drives them to go the extra mile and sacrifice in order to earn acknowledgement from the consultants, contractors and the community at large.

(c) Understanding and complementing each other's roles of all parties in the contract

Graduates come to sites with less knowledge and need to be mentored so they can fully understand the technical aspects and contractual issues that bind the client, main contractor and targeted enterprises. Most of the contract stipulations related to targeted enterprises is not always relevant to everyone on site which then puts everyone on the same level, although experience may be an advantage. Most of the time ERTEs are accused of interfering with the contractor, especially if there is no teamwork on site and their roles are not fully understood.

(d) Secondment from the client to the engineers

Currently ERTEs are being seconded by the client to the engineers. As such they are sometimes seen as the client's spies. The ERTEs having direct contact with the client may create problems if their roles and responsibilities are not clearly defined (in terms of the communication channels) and understood by the different parties. Working system should be defined and firmed repeatedly. The vision of all project's stakeholders is one, once the model is admired then the engineers and contractors themselves will have the same model to utilize on sites which will be a benefit to the communities and targeted enterprises as far as the CPG is concerned.

V. BENEFITS OF HAVING ERTEs ON SITE

- Production and quality issues can be addressed on a regular basis.
- Quantities of work done by targeted enterprises are constantly monitored.
- Payments to targeted enterprises and labour are monitored.
- Time sheets and daily diaries are constantly monitored.
- Allows engineers to balance the work load on other technical aspects of the project except the CPG procurement.
- ERTEs assist with other duties on site besides targeted enterprise work.
- Less or no strikes on sites due to their involvement and assistance.
- Targeted enterprise grievances are addressed early.
- Targeted enterprise development is monitored.
- ERTEs assist contractors in monitoring OHS compliance on site by the Targeted Enterprises.

VI. FINDINGS DURING THE IMPLEMENTATION OF ERTE MODEL

Graduates (ERTEs) understand the methodology of implementing the process for the new transformation which entail stakeholders engagement, procurement process, technical aspects which will be explained further, working system and maximizing of the contract participation performances (CPP) during the construction phase.

The consultant team and the contractor with the experience understand how the site should run and it would be easy to work closely with the ERTes so that the project is well executed.

Based on the projects where the ERTes model was implemented, it was proven that most SMMEs with Contractor Industry Development Board (CIDB) grading from 1CE to 2CE do not have a better understanding, since most of them never got the site exposure before.

Most of the conventional project sites have the stipulated duration to complete the project, which becomes more difficult to find the balance in grooming the SMMEs and focusing on task stipulated on the main scope of work.

The ERTes model has been initiated in some of Southern Region SANRAL projects which some of them were successfully completed. Some of the projects completed are as follows; R67 section 4 Resurfacing of National route situated between Seymour (km 0.00) and Whittlesea (Km 54), R390 section 2 Resurfacing of National route from Hofmeyr (Km 0.00) to the R56 intersection (Km 34.2) and the Special Maintenance on National route R392 section 1 from N6 at Cathcart road/Griffith street to route R392/R410 (Km 9).

The common findings were that the approach for all projects was the same. The SMMEs that were evaluated upon the findings on the above mentioned projects through the assistance from the ERTes were the local targeted enterprises (SMMEs) with CIDB grading from 1CE to 3CE as there were no targeted enterprises situated within targeted area with CIDB grading above 3CE.

The training of the targeted enterprises was also part of the objective to develop the SMMEs in all projects which was done through procurement in order to transfer skills to the SMMEs before the commencement. However, through the findings from the contractor, consultant, client and ERTes, it was discovered that the training offered to the SMMEs would not be adequate enough to stop the grade 1CE and 2CE from constructing substandard work since the quality of work was also the huge concern. That is where all parties closed the gap of letting the SMMEs construct the substandard and occurring unnecessary cost.

Some of the SMMEs work packages that were identified to be done by the were as follows;

- Fencing (Vermin proof and stock proof)
- Concrete work (Concrete v-drain and edge beams and minor culvert)
- Stone pitching
- Grass block
- Gabions
- Sub soils
- Cleaning and etc.

The above work packages were mostly recommended to be done by the SMMEs, since the risk its less in terms of construction methods and cost incurring compared to the huge task like seal work.

Through the working system among the ERTes, contractor, consultant and the client, the targeted production rates for all activities were set and the challenge was that the SMMEs struggled to achieve since it was meant to be achieved by the experienced contractor. For the SMMEs to survive, a lot of adjustment in terms of adding resources (material, plant and tools) and adequate supervision really assisted.

During the construction phase, the SMMEs were encouraged to work in accordance with the drawings, Committee of Land Transport Officials (COLTO) document and other required specifications, completing their daily diary. This includes work descriptions, input cost, output cost, weather and other important details that could assist them track their work done.

With the above mentioned working relation, it made the model to be easier because both parties were working through the projects documents specified above, which was making it simpler because everything was transparent.

One of the sites mentioned above managed to double the CPG required by the client because approximately thirty (30) SMMEs were appointed, which was the challenge due to the resources and supervision required, but through the teamwork the gap between the experienced and inexperienced were closed because a healthy working relationship and understanding between the stakeholders this was created.

VII. CONCLUSIONS AND RECOMMENDATIONS

The model is new but very promising. It can assist with improving how projects are being implemented by focusing on government's radical transformation objectives. It also addresses the issue of inexperience and unemployment.

Consultants or contractors have enough resources to develop, mentor and guide the ERTes, which will enable them to contribute positively to projects. There is also a lot of interaction with the communities, so skills such as people's management skills will also need to be developed within the

ERTEs. Accountability and responsibility then become critical elements for the model to be successful. Nothing can replace experience but hard work will assist in addressing the lack thereof.

The main objective of appointing SMMEs under SANRAL projects, was to empower and incorporate SMME partners in various value, adding operations as part of the delivery mechanism to the client to build capacity within these enterprise and also accelerate development, sustainability and ultimate financial and operational independence of the SMME, it could be concluded by stating that the objectives and the aim of developing the SMMEs with the ERTEs, contractor, consultant and client work, if the team is working together.

VIII. ACKNOWLEDGEMENT

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