

SUSTAINABLE INFRASTRUCTURE DELIVERY THROUGH REGIONAL COOPERATION

Keynote Address by

Ronnie Khoza, CEO: Construction Industry Development Board (cidb) – South Africa

PO Box 2107, Brooklyn Square, 0075, South Africa

Website: www.cidb.org.za

e-mail: ronniek@cidb.org.za

Tel: +27(0) 12 482 7201

Fax: +27 (0) 86 644 4208

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BACKGROUND AND INTRODUCTION

Many developing countries all over the world need infrastructure to improve the livelihoods of their citizens and their quality of life. While there are many constraints to the delivery of

infrastructure, one of the most obvious factors that hampers delivery is project cost. Access to finance is the lifeblood of infrastructure delivery. Over the years it has also been acknowledged that it is not just access to finance that is crucial but how a funding model for each project, or groups of projects, is packaged. Unfortunately, the cost of infrastructure delivery continues to escalate to the point where many developing countries simply cannot afford such infrastructure any more without plunging themselves into unaffordable credit facilities or delaying their projects almost indefinitely.

The decades-long backlog on infrastructure and poor access to service delivery for millions of poor communities force a new approach on all of us as government, industry, financiers and other role players. Any delay simply means these countries will pay even more in future as infrastructure will continue to be unaffordable. These countries have no choice but to look at innovative approaches to ensure they catch up on their infrastructure backlogs.

In addition to poor access to project funding, the shortage of critical skills, non-integrated planning, traditional approaches to project management and poor packaging of projects, poor packaging of funding models, have hampered delivery of infrastructure projects. It is important that, as we look for solutions that can help us out of this situation, we also consider some methods that have been used in the past by some countries which were faced with similar challenges, albeit in a different context. We can then expand this approach and explore how it could be accelerated, facilitated and customised for countries facing a dire need for speedy solutions for critical infrastructure. The concept of regional collaboration is one such solution. It has been used among countries that are neighbours or located in the same regions and have common objectives in terms of development and user benefits.

In my keynote address I will try and deal with environment for regional cooperation through an example of an innovative delivery model, link this to local contractor development and give cases where regional collaboration was used successfully in Southern Africa many years ago.

CRITICAL ELEMENTS OF THE CONSTRUCTION VALUE CHAIN

Before I deal with the details of the collaborative approach, I need to reflect on the critical elements of the construction value chain from a technical planning point of view. I will then refer to these later when analysing the overall approach including risk management, political environment, etc ito how they impact on infrastructure delivery.

- **Identification of a need by a country**-a country identifies a need for its communities in a particular area.
- **Pre-feasibility/feasibility study** - consideration of options for collaboration with other countries. This stage will almost definitely slow down the process as selling the idea to fellow countries who may have other priorities and convincing them to buy into a new “monster” has challenges within each government’s planning.
- **Design of the package** (technical, funding, phasing in of solution) vis-a vis priorities. A single country planning a mega project takes long when all the required sub-elements have to be factored in. It is even more challenging to prioritise, align

prioritise between countries, compromise self interests, do costing and agree who gets the first benefit and who pays first when many countries are involved.

- **Construction/implementation**-where will the fixed asset be, who will own it, what are the potential risks with the proposed “landlord” or “host” country, etc.
- **Post construction maintenance of physical product** (cost, skills, funding)

READINESS FOR REGIONAL ECONOMIC INTEGRATION

The general principles for regional collaboration are generic but project-specific and country-specific adjustments will vary. Which comes first? Where do we start? Surely approaching your enemies with a sound and exciting proposal may be innovative on your part as an initiator of such a move but, can you trust your enemy that much? Does having analysed a need for one country necessarily dictate who the partners **MUST** be as opposed to who they **MAY** be?

A country will identify its need and proceed with some level of pre-feasibility study. This will cost money but this is what all countries must do initially and there is value in this exercise. The pre-feasibility study should give pointers as to the depth of the problem and which other countries have similar challenges, which ones could be part of the intended collaboration-collaborating countries may already know, albeit to a limited extent, what their constraints may be. An example is water shortage in a region. This is normally well established through studies already documented by organisations such as the World Bank. Should specific studies not be available for a particular need, this is the opportunity for regions to collaborate and conduct such studies as a basis for future infrastructure collaboration.

The project initiating country eliminates the enemies and those that do not “qualify” for the proposed venture, approaches those who could take interest and jointly the countries agree to do a joint feasibility study. The new partners may wish to do their own pre-feasibility studies before the joint feasibility study as a big step forward. At this stage the countries should have more concrete information about the project, proved its sustainability and can now individually make sure they are comfortable with each other before further commitments take place-a due diligence in, among other elements, the following:

- Political stability.
- Macro-economic and general financial performance.
- General risk profiling including the period of the life of the project.
- Trust between/among the partners-a very subjective but critical character analysis.

The joint feasibility stage will obviously slow down the pace of implementing the project. Where all partners are allies and positive about their contribution, this stage will receive positive support and move forward quicker. The sharing of resources where there is an opportunity for this will need careful consideration-one country may have an abundance of a resource to be shared but what will this country get in return if the project fails? The important question to be dealt –“where will the physical asset be located?” should be finalised by this time. Again all the relevant due diligence should have been done to even confirm the location, making an obvious choice of “landlord” country or countries.

The design of the package is the next tricky stage. The technical design of the infrastructure should be a solution rather than just a physical asset. Which designer should be used? What about local content? Is there an opportunity for accommodating local firms for skills transfer or contribution? Who will take care of maintenance once the project is completed, should they not be involved right at this stage? Then there is the design and packaging of the funding model. While financiers will normally analyse the proposed project and propose a funding model, it is prudent for project initiators to proactively analyse their own environment and suggest a basic model. This helps to remove the element of surprise when the financiers suggest otherwise.

An affordability exercise will help with packaging the construction of the project, informing partners when it should start, when it should end, if there should be separate but linked phases as building packages, planning for phases to kick in when the partners are ready and perhaps having built capacity themselves when they did not have it at the beginning, relocation of local communities and costing for this, environmental matters and costing for them, performance and cost of EIAs, etc. This is critical for mega, multibillion rand projects that require innovative financing.

I have already alluded to the fact that most of these projects cost millions and billions of US Dollars. Participating countries normally provide project funding through innovative credit instruments and not directly from sole or joint fiscus. Therefore the countries participating in a cross-border project would look at loans from lending institutions like the World Bank, African Development Bank and other development banks as well as various other options like bonds and Public Private Partnerships (PPP). Where the option of a loan has been used, this poses a serious risk as these commitments are serviced over many years and political, financial(including exchange risk) and security risk may change for each country over time, affecting the joint loan repayment programme in some way.

Pertinent issues relating to the actual construction of the project include: where the asset will be, how the environmental issues are going to be addressed, how will affected people be relocated and compensated for (the cost to be part of the total project cost, not a surprise), number and type of jobs to be provided to local communities during and post-construction phase, contractor development-how different levels of contractors will be accommodated, where will the construction materials come from, will local manufacturers and suppliers benefit?

Post construction maintenance is crucial but often neglected during the planning and construction phases. Mega infrastructure projects are expensive and designed to last for many decades. They are designed to be a service point for the benefit of the communities. Lack of maintenance will immediately reduce their lifespan and useful life, thus not achieving the very purpose they were designed for in the first place. This also puts a burden for the countries-to redo the same project all over again simply because they did not look after it. The cost of poor maintenance increases with the number of years of not performing basic maintenance, becoming exponential over time. When maintenance costs become unaffordable, a new asset may have to be re-built.

The current economic melt-down has exacerbated a situation that was already bad for developing countries. Many projects that could have been possible, even under the

previously difficult period, may now be postponed indefinitely. Regional collaboration should still come out as the best solution to provide some relief.

A common construction regulatory regime is required between partnering countries to make sure that the standards are applied fairly and equitably when they collaborate on such projects. There must be an agreement as to what standards will apply in each case. Existing standards in one country may disadvantage other partnering countries unless some basic rules are adopted. It is therefore advisable to have contractor registration bodies that have similar approaches to registration standards. It is for this reason that some countries in Africa and other developing countries have decided to collaborate on contractor development. The inaugural meeting to launch this initiative among contractor development agencies was facilitated by cidb-South Africa in October 2008. This process culminated in the signing of a MoU that guides and commits these organisations to collaborate, share information and assist each other in establishing aligned registration bodies. This is the foundation for sustainable collaboration.

In southern Africa two examples of potential collaboration are water and energy. Water, which is a scarce resource in many countries in the south, requires strategic collaboration between neighbouring countries. Countries like South Africa and Lesotho on the one hand, and South Africa and Swaziland on the other, saw a need to collaborate and this relationship led to the building of a number of dams and related infrastructure to benefit South Africa with water, and Lesotho with hydropower and much needed revenue in the LHWP case. In the case of Maguga Dam, both South Africa and Swaziland needed water for agricultural activities. It should be noted that these arrangements can be tricky and risky during the whole project lifespan. Apart from conducting and relying on due diligence among participating countries, an enormous amount of trust is required by countries who commit to such deals. Risk is normally managed through the signing of long-term agreements and the establishment of a special purpose vehicle (SPV) or management company, which must represent the interests of all the countries involved.

ALTERNATIVE DELIVERY MODEL

The cidb-SA developed and piloted the Standard for Uniformity (SfU) in 2004 as one of its prescripts. This document standardises construction procurement in the public sector. The SfU has been amended as and when required but almost every year to ensure its alignment with regulation amendments that impact on procurement.

The South African construction industry and Government have experimented with numerous contractor development initiatives. Some in-house programmes have been successful to some extent while others have failed to provide sustainability of a significant, national scale.

The Business Trust, having observed the poor performance on the Expanded Public Works Programme, commissioned the development of a new model. One of the Metropolitan Municipalities in South Africa, eThekweni Metro (greater Durban municipality in the KwaZulu-Natal province), working with cidb-SA, used the cidb SfU to develop an alternative infrastructure delivery model that has proved successful. This Metro's Water and Sanitation department is responsible for the maintenance of about 13 000km of water mains in its area of jurisdiction. About 2 500km of the water mains are ageing asbestos cement pipes which

are at the end of their useful life. Numerous maintenance problems like frequent bursts have proved to be a challenge to the client.

eThekwini Metro intended to develop and pilot a new delivery model to replace the asbestos cement pipes. It used the cidb SfU, cidb Specification for Social and Economic Deliverables in Construction Works Contracts and the NEC3 Professional Service Contract for the appointment of the consultants. Contracts were packaged and awarded according to specific criteria, intended to achieve specific technical and social developmental objectives.

The model was structured in the following manner: the project is led by one senior engineer who is an employee of the Metro and project manages the programme; the project was broken into four work packages based on water districts; consultants and contractors were given a water district where a price was negotiated; the contractors were assigned a water district and the responsibility to maintain the existing water mains and repair of the burst pipes until the new pipes were installed, and the decommissioning of old pipes; a full time mentor in the form of a training service provider with a built environment background was also assigned to all the emerging contractors as part of the project. Contractors were grouped in such a manner that one established contractor, the main contractor, was assigned four emerging contractors as co-contractors. The client took the responsibility for paying the emerging contractors directly, which removed payment delays normally experienced when the main contractor has to disburse payments to all smaller contractors. The project was initially planned for a three year period and is still in progress.

Performance targets for the subcontractors are strictly monitored by the mentor. The mentorship programme is designed to cover quality training, H&S and business management. Temporary employment is provided to local communities to reduce the impact of unemployment. These workers dig trenches and they are rotated every four months to give them all a fair opportunity to earn some money. Social issues like HIV/Aids awareness have been provided. The set targets, i.e. technical, financial and social, were already met long before the end of the contract period.

CASES OF SUCCESSFUL CROSS- BORDER MEGA PROJECTS

- (a) LHWP(Lesotho Highlands Water Project): Katse Dam, Mohale Dam, Muela Dam and Muela Hydropower Station

The Lesotho Highlands Water Project is a very interesting case for Southern Africa. It is the largest project ever undertaken in Southern Africa. South Africa needed a resource to supply water to the Vaal Dam, which in turn, supplies water to the population of Gauteng province (formerly Transvaal). South Africa did not have adequate rain fall into catchment areas located within the country where dams could be built. Lesotho on the other hand had an abundance of catchment areas in the mountains, which could be used for this purpose. In fact, the Lesotho mountains were identified to have potential catchment areas for this purpose as far back as 1955 by a specialist water engineer called Ninham Shand. It was not until the 1980's that the project was ultimately realised.

A special treaty was signed by the two countries and as part of the treaty, South Africa pays the Kingdom of Lesotho millions of Rands in fixed and variable royalties (TCTA website, "LHWP FUNDING"), the latter to be paid until 2045. This project has directly and indirectly improved the economic outlook of the mountain kingdom. Also, as part of the project, a hydropower station was built in Lesotho, benefiting that country with local non-fossil energy generation. A world-class road network was constructed to assist with material haulage and access to the construction sites. This facility was part of the additional contribution to benefit Lesotho after the project was completed.

South Africa is responsible for the water transfer component (95% of total cost) while Lesotho is responsible for the hydropower component (5% of total cost)(see TCTA website-www.tcta.co.za, "LHWP FUNDING"). The whole project, but more especially Katse Dam, has been hailed as a landmark world iconic project that generates tourist revenue for Lesotho.

Part of the project was to build office blocks, houses and access roads to these facilities. Emerging contractors could be involved in these smaller projects as part of their development. Established contractors could then focus on the more complicated components of the project.

(b) Maguga Dam, Swaziland

South Africa and Swaziland are neighbours. The ultimate aim of the project was poverty reduction and employment through commercial agricultural development in rural areas. The two countries signed treaties in the early 1990's that led to the construction of Maguga Dam as one of the components of the project. South African consultants and contractors were involved, together with their international counterparts, on this project. The construction of Maguga Dam was part of phase 1b where the cost of construction was split 60% (RSA) and 40% (Kingdom of Swaziland)(see KOBWA website, www.kobwa.co.za).

As part of the project, workers quarters, office blocks, less complicated access roads were part of the project. Emerging contractors could be given packaged projects to participate in development programmes on this mega project.

CONCLUSIONS

Sustainable contractor development can be enhanced through regional collaboration among neighbouring or reasonably neighbouring countries in developing areas. A strong regulatory environment and trust will give comfort to partners as this type of collaboration among sovereign states is prone to risk exposure. Generic factors should be adjusted for project-specific and country-specific peculiarities. There are successful projects that we can learn from to ensure sustainability of the collaborative approach.