

Upgrading of the wastewater treatment facilities at Koster

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The town of Koster was a typical apartheid town occupied by white people. After the demise of apartheid it experienced an influx of people who were disadvantaged under apartheid. They were looking for a better life and settled on the fringes of the town with no basic services. The existing wastewater treatment works was overloaded and leaking. This polluted the river catchment affecting adjacent farms. The leaking ponds were also damaging the foundation of a main road.

The project prevented the pollution of the catchment area and the collapse of the road. The effluent was used for irrigation to produce animal fodder. This helped the farmer to increase the area for grazing and produce cheap milk. This has created a Public Private Partnership and stimulated local economy and job creation. People with the bucket system could not access housing grants due to lack of a proper sanitation system. After the eradication of the bucket system, housing grants could be accessed and proper houses built.

Background

Koster was a typical apartheid town occupied by white people. After the demise of apartheid in 1994 the town experienced an influx of people disadvantaged under apartheid. They came in thousands looking for a better life and jobs, and settled on the fringes of the town with no proper services, swelling the population to 38,000. A portion of this area was provided with waterborne sanitation leaving the rest with a bucket sanitation system.

The existing wastewater treatment works comprised of a series of ponds, which were overloaded, and leaking. This was polluting the river catchment area affecting the adjacent farms. The leaking effluent created a marshy area downstream of the ponds causing damage to the foundation of the national road connecting the towns of Koster and Lichtenburg.

The municipality, being financially weak, applied for and obtained funds from the Consolidated Municipal Infrastructure Programme (CMIP), which is a programme under the Government's Reconstruction and Development Programme created to provide basic services to the people disadvantaged by apartheid.

Objectives and strategies

The objective was to eradicate the unhealthy bucket system by providing an acceptable sanitation system, prevent the pollution of the catchment area and the collapse of the main road. The poor position of the already financially weak municipality was further aggravated by the people's unwillingness (a process that started during the apartheid period as a form of protest) or inability to pay for services provided. The project should be cost effective in construction; and

the maintenance cost should be minimal and be a vehicle to Implement government policy of employing women, youth and Small, Medium and Micro Enterprises (SMME).

The consultant's design and construction method had to:

1. Keep the construction cost low and keep the maintenance cost to a minimum.
2. Make the construction method to be labour intensive and encourage the employment of women.
3. Ensure that the construction process is conducive to the use of SMMEs

The successful project conclusion depends on the active involvement of all those that are affected and involved. To achieve this it is imperative that a Project Steering Committee (PSC) be established with strong community representation.

Establishment of priorities

To establish a way forward to eradicate the bucket system and prevent pollution of the environment. it is important to:

1. Identify the extent of the problem in respect of overloading of the ponds and pollution of the catchment area. Identify families to be provided with waterborne sanitation and estimate cost, including future expansion.
2. Identify funding sources and forward applications. Explain the process and the effect of the project on the community through workshops. Identify members of the community, specially women and youth, ward councillors

and other role players to be on the PSC.

3. Appoint a consultant to assist municipality to design, construct and manage the project, as the municipality had no capacity in-house to design, construct and manage the project.

Mobilisation of resources

Provinces received funds based on poverty, area, population and other factors from CMIP. Funds flowed from National to Provincial to Local Government. The municipality submitted a business plan (BP) to CMIP to access funds. An amount of US\$ 288,750 was approved and the municipality provided an amount of US\$ 86,625. A Project Steering Committee (PSC) was selected to drive the project. It was made up of four members from the community, three of whom were women, the ward member, a CMIP representative, a District Municipality representative and the consultant.

The design incorporated the existing ponds, which were leaking and overloaded due to explosion of the town's population. The pollution due to leaking was prevented by constructing a deep, thick clay wall between the road and existing ponds where the leaking water was collecting. New ponds constructed with the necessary pumping systems to cater to the present population and future expansion.

The nature of the work was such that it demanded high physical abilities. Despite this, 28% of the labourers employed were women. The Provincial Programme Manager and his team carried out the overall management in respect of financial control and overall progress.

Process

The people having been deprived of basic services such as water and sanitation under apartheid are now demanding higher levels of service. CMIP funding caters only for basic services such as a Ventilated Improved Pit latrine (VIP). The aspiration of the people was a waterborne sanitation system. The municipality had no funds to cater to the people's aspirations. People were unable or unwilling to pay for such high services compounded this situation.

On the other hand, if the people were not provided with proper sanitation, it would create an unhealthy environment. Most of the people who need proper sanitation are the poorest of the poor. It is government policy to reduce poverty with the ultimate aim of eradicating it. Poverty alleviation does not only mean improved financial status, it also means a healthy and better standard of living giving the poor people a sense of well being.

The need to upgrade the treatment plant and prevent an unhealthy situation was imperative. This would also help to eradicate the existing bucket sanitation system. The municipality, being without funds, revenue and capacity in human resources, was unable to attend to this problem. The difficulty was overcome by accessing CMIP funds.

Monthly meetings were held during construction attended by all role players, in particular the PSC members, CMIP Provincial Programme Manager's representative, District Municipality representative and the consultant. At these

meetings the following criteria were discussed;

- The physical progress and financial status of the project.
- Employment of women, youth and the disabled.
- Opportunities created for SMMEs
- Training provided to local communities.
- Key Performance Indicators of the project.

To improve *cost recovery* the municipality communicated to the community that with the replacement of the bucket system by waterborne sanitation, it was imperative that payment for services be made, as the revenue collected would go towards the *operation and maintenance* of the sewer system. The community was further advised that, without maintenance, the system would collapse and they would lose their good sanitation system.

Results achieved

The upgrading of the treatment facilities has prevented the catchment area from pollution thereby preventing the detrimental effect on the surrounding farms and the collapse of the main road. The unhealthy bucket sanitation system could be replaced by waterborne sanitation. The influx of people has created the necessity to build houses. The National Government provides a housing grant for those households earning less than US\$ 375 per month. These grants are only made available if the area has the necessary infrastructure. Since no adequate sanitation infrastructure existed, funds could not be accessed. Upgrading of the treatment facilities would enable the municipality to provide sewer reticulation once funds are available and the people could access the housing grant and build proper houses.

The final effluent generally is discharged at high cost to waste. In this case the effluent is used to grow animal fodder, expand animal husbandry and improve milk production. This has the following impact:

- Creation of Public Private Partnership.
- Expansion of land for fodder from 4 hectares to 30 hectares.
- Increase in milk production.
- Transport cost of fodder eliminated reducing the cost of milk production.
- Distribution of cheap milk to the people, which has created small business enterprises.
- Jobs created.
- Stimulated Local Economic Development.

The existing infrastructure was incorporated in the construction to cut costs. The construction method was labour intensive that allowed the employment of several community members who were trained on the job. Some were involved in labour only contracts.

To reduce maintenance costs the pond sides were lined with bricks. This was carried out by the use of labour and labour only contracts. This has empowered many people in

the town to carry out small contracts on their own and to join forces with established contractors on larger jobs.

Lessons learned

This project has shown the need to involve the beneficiary community and the respective ward councillor from the inception of the project to complete it successfully and make it sustainable.

Difficulties were experienced between the main contractor and the labour only contractors due to disagreement on production levels and payment. This could possibly have been avoided if the labour only contractors had been given an opportunity to tender on their part of the works before the main contractor tendered. Once the consultant evaluates these tenders, then the main tender is let out in order to avoid exploitation of the labour only contractors by the main contractor. This method would extend the tender period. To avoid delay, a sum should be included in the main contract for work by labour contractors.

The success of the project in respect of operations is a result of a partnership between Public and Private enterprise. The result is an improved private enterprise, job creation and the stimulation of local economy. The advantage for the public sector is the economic discharge of the final effluent.

In planning projects of this nature it is of utmost importance to work hand in hand with the community. It should be realised that the community's aspirations are high. Therefore, it is essential to explain in the simplest possible language the difficulties that the municipality has, what the municipality is able to provide and to maintain, including the rationale for the need for paying for services.

Transferability

The important lesson learned from other CMIP projects was the need for all the role players such as the beneficiaries, politicians, and bureaucrats to interact and work towards a common goal. No process could be transferred en-masse but could be adopted taking into account the environment, culture of the people and their needs. As in this project, workshops for the community should be conducted in all projects to address the concerns of the community and other role players.

Incorporation of any existing infrastructure in the upgrading, innovative labour construction methods and building partnerships to stimulate economic growth and job creation are items that are transferable.

In a country where water is at a premium this project has shown that the effluent from sewage treatment facilities, which is costly to discharge safely, could now be used for farming. The effluent could be used to create small farms and settle the jobless to grow trees such as citrus and animal fodder such as lucerne.

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