

SCALING UP LABOUR-INTENSIVE DAM CLEANING IN NKONKOBÉ LOCAL MUNICIPALITY – APPROACH AND ESTIMATED COSTS

Nkonkobe Farmers Association and ARDRI, UFH

April 2016

Introduction

In July 2015, the Nkonkobe Farmers Association and ARDRI of the University of Fort Hare, organised the cleaning of a dam near Nkobo-Nkobo, in Gaga Traditional Council. The purpose of the exercise was to test whether a labour-intensive approach to dam cleaning is feasible, as compared to the prevailing approach which involves the use of a TLB. The finding was that the labour-intensive approach was feasible and, in fact, far less expensive than the conventional approach. The cost of the dam cleaning was R2600, as opposed to the usual cost associated with the use of a TLB, which is R85 000 or more.

The purpose of this document is to indicate how this approach could be scaled up, and what it would cost, under the assumption that this would be managed by the Nkonkobe Farmers Association.

Approach

The approach devised for scaling up the dam cleaning is based on the approach used for the ‘experiment’ involving a single dam at Nkobo-Nkobo, however with some differences. These differences illustrate key aspects of the proposed approach to scaling up:

- The cost of transport is provided for, whereas in the experiment this was provided free-of-charge by Fort Hare. Since the Farmers Association does not own its own transport, a bakkie will be hired from one or more local service providers.
- Tools will be purchased and re-used for all of the dams, whereas before the tools were borrowed from local community members. In fact enough tools will be purchased in order for two dams to be cleaned at the same time.
- Because some dams that one would wish to clean have some water in them, provision is made for pumping them out beforehand (i.e. ‘pre-pumping’). This requires the purchase of a small petrol-powered pump, and visiting these dams beforehand in order to pump out the water. For purposes of the estimates below, it is assumed that two-thirds of the dams require pre-pumping.
- In order to allow for the fact that some dams will be larger than the one cleaned at Nkobo-Nkobo, a conservative estimate is made that on average 2.5 days will be required per dam.
- Allowance is made for ‘scoping, monitoring, and awareness-raising’, which is a combination of scouting around the Municipality in order to determine which dams should be prioritised for cleaning in the future, monitoring dams that have already

been cleaned in order to check for problems or damage, and meeting with community members in order to explain the purpose of the dam cleaning, to recruit workers, and to mobilise volunteers for occasional repairs.

- The budget provides for a 10% management fee to the Farmers Association and a 5% contingency.

While care has been taken to plan realistically and holistically, it must be recognised that the proposed scaling up is itself an experiment. It will only be upon trying it that we will know for certain the most effective and cost-effective manner to scale up dam cleaning.

Cost estimates

The overall cost estimates are built around four main elements or components, namely: i) the direct cost per dam associated with labour, transport, and catering; ii) the costs of the basic package of tools and equipment; iii) the costs associated with the pre-pumping (excluding the cost of the pump, which falls under 'equipment'; and iv) the costs for the 'scoping, monitoring, and awareness raising'. The overall estimates are for the cleaning of 40 dams, of which 10 would be in each of the four main areas of the Municipality, namely Middledrift, Alice, Fort Beaufort, and Seymour/Balfour.

i) Direct cost per dam

Item	Rand	Notes
Labour	3 180	12 workers x 2.5 days x R106/day
Food, beverages, etc	1 400	14 people x 2.5 days x R40/day
Petrol	150	
Bakkie hire	1 250	2.5 days x R500 per day; pick up and drop off only
<i>Total</i>	<i>5 980</i>	

ii) Tools and equipment

Item	Number	Unit cost	Sum
Wheelbarrows	8	390	3 120
Spades	20	130	2 600
Picks	8	220	1 760
Pangas	4	165	660
Saws	4	165	660
Pump & pipes	1	6 600	6 600
Pots	4	1 100	4 400
<i>Total</i>			<i>19 800</i>

iii) Pre-pumping*

Item	Rand	Notes
Labour	212	2 workers x 1 day x R106/day
Lunch	80	2 workers x 1 days x R40/day
Petrol	200	
Bakkie hire	1 100	1 day full use
<i>Total</i>	<i>1 492</i>	

* This is the estimated cost for 1 full day of pre-pumping, during which it is assumed 3 dams can be pumped

iv) Scoping, monitoring, and awareness-raising

Item	Rand	Notes
Labour	318	3 workers x 1 day x R106/day
Lunch	120	3 workers x 1 days x R40/day
Petrol	300	
Bakkie hire	1 100	1 day full use
Total per one-day trip	1 808	
Per year	7 232	Four trips per year per area*
<i>For all 4 areas</i>	<i>28 928</i>	

* As above, the 'areas' are defined roughly as Middeldrift, Alice, Fort Beaufort and Seymour/Balfour

Summary cost for 40 dams

Component / item	Rand
Direct cost per dam x 40	239 200
Tools and equipment	19 800
Pre-pumping	14 328
Scoping, monitoring and awareness	28 928
<i>Sub-total</i>	<i>302 256</i>
Management fee (10% of sub-total)	30 226
Contingency (5% of sub-total)	15 113
<i>Grand total</i>	<i>347 594</i>
<i>Average cost per dam</i>	<i>8 690</i>
<i>Total wages to be paid</i>	<i>134 196</i>

Conclusion

Taking into account transport costs, tools, pre-pumping, etc., is such that the average cost per dam is quite a bit greater than the cost recorded for the pilot exercise. Most of the difference in fact is on account of transport costs, but there is a possibility that these could be negotiated down if in fact the package of 40 dams were to be funded. Another difference relative to the

pilot is a higher daily wage; the wage has been raised in keeping with the sectoral determination for agriculture according to advice received from various stakeholders. Other costs have been increased to reflect inflation, given that the prices of tools and petrol have risen since they were originally costed about 7 months ago.

Regardless of these changes, the average cost per dam remains far, far lower using the labour-intensive approach relative to the use of a TLB. It should also be noted that some of the costs reflected here are *not* included in the benchmark R85 000 per dam for the TLB approach, which does not provide for pre-pumping, nor for ‘scoping, monitoring, and awareness-raising.’

Forty dams in one year (or for that matter within 6 months) would represent a dramatic increase in the rate of dam cleaning in Nkonkobe, whereas the total budget of R350 000 would only cover 4 dams if the TLB approach were applied. To be clear: 40 dams itself is just a start – but a good one.