# Addressing the infrastructure maintenance gap while creating employment and transferring skills: An innovative institutional model

Kevin Wall
Department of Construction Economics, University of Pretoria, Pretoria, South Africa

CONTACT Kevin Wall. Department of Construction Economics, University of Pretoria, Lynnwod Rd, Hatfield, Pretoria, South Africa. Email: kevin.wall@up.ac.za

## ABSTRACT

The 'social franchising' model for the operation and maintenance of selected water and sanitation infrastructure, the conceptual origins of the model, its subsequent development by desktop research methods, and its piloting in the field, are described. Piloted in South Africa by a team with extensive experience of water and sanitation infrastructure and business development, the model has since been rolled out to scale, simultaneously bringing about (i) the servicing of selected infrastructure, returning it to full use, and (ii) micro-business development and nurturing, job creation, and skills development. Development and implementation of the model over two decades have demonstrated its robust nature compared to equivalent stand-alone micro-businesses, how it can partner in schools to improve health and hygiene education, and the effectiveness of the work it has done on infrastructure servicing and to accomplish tasks other than basic maintenance.

**KEYWORDS**: Infrastructure maintenance; jobs for the low-skilled; learning at the workplace; micro-business; partnerships; social franchising

## 1. Introduction

There is abundant evidence of the widespread poor maintenance – and consequent poor condition, adversely affecting service delivery – of infrastructure in South Africa. At the same time, many South Africans, predominantly those with low skills levels, are unemployed. Thus, more jobs are needed for which low skills levels are sufficient but where skills improvement while working can be enabled. Given the increasing need for infrastructure maintenance and that much maintenance work can be done by workers with entry-level skills, it is clear that addressing maintenance backlogs would generate extensive opportunities for job creation and skills development for those who most need this, while improving infrastructure condition and hence the reliability of services such as water, sanitation and roads (Department of Public Works et al., 2007:5).

However, this is easier said than done.

Something like 20 years ago, the Council for Scientific and Industrial Research[1] (CSIR) team investigating municipal service delivery failures in South Africa caused by poor infrastructure condition could not help noticing that in the vicinity of the failure, the delivery of other services, the responsibility of private sector undertakings, was always reliable. The key difference, it turned out, was the institutional model. This led to the formulation of the hypothesis:

> That a social franchising model could improve the operation (including – importantly – the maintenance) of some types of basic municipal services, while facilitating the

employment of people with low skills levels and little work experience, and training them.

Desktop research, including literature surveys, investigated how such a relationship could be set up particularly, but not only, in the context of small-town and rural South Africa. Presentation of this research attracted significant funding which was applied to pilots, one for schools water and sanitation facilities, and the other for domestic sanitation. This led to a series of contracts for the implementation of the social franchising model as applied to the maintenance of low-technology sanitation facilities. Recent developments include adaptations of the model for additional purposes and to attract new sources of funding.

The article commences with a statement of a two-part problem, followed by a statement of the hypothesis with background as to how it was conceived. Description of the research methodology, including a literature survey, leads into a description of the initial pilots. The results of the pilots, and subsequent work, are presented and discussed, followed by the conclusions.

## 2. Identification of problem: part one: jobs and skills

Given that many South African school-leavers find it difficult to get jobs because their skills levels are so low, more jobs are needed of a type which they can do and which will enable them to up-skill while working (Wall, 2011).

South Africa has exceptionally high unemployment levels. Even before counting the cost to the economy of the COVID-19 lockdown, the official unemployment rate in the fourth quarter of 2019 stood at 29.1% – meaning that 6.7 million people were officially without jobs (Statistics South Africa (Stats SA), 2019). The expanded unemployment figure, which takes into account people in the economically active age group but who have given up trying to find employment, was much higher, i.e. 38.5% (Stats SA, 2019).

The lockdown associated with COVID-19 hit the economy hard. For the equivalent quarter two years later, i.e. the fourth quarter of 2021, the 29.1% official unemployment rate had risen sharply to 35.3% (Stats SA, 2021:6), and the expanded unemployment figure had risen to 46.2% (Stats SA, 2021:17).

There is a significant correlation: those with the lowest skills levels have, everything else being equal, the smallest chance of obtaining jobs. In the fourth quarter of 2021, of the total unemployed, 516% did not have a matriculation certificate (i.e. after minimum 12 years of formal schooling), a much higher percentage than that for those employed (Stats SA, 2021:17).

The youth are particularly hard hit by high unemployment. In 2020, ‘of the 20.4 million young people aged 15–34 years, 40.1% were not in employment, education or training’ (Stats SA, 2019). This had risen to 44.7% two years later (Stats SA, 2021:18).

Employment is vital to social, economic and political development; it is a key mechanism for addressing widespread poverty and inequality. Many of the soft skills such as punctuality, discipline, the ability to work in a team and others needed to enhance employability are developed in workplaces. Indeed, the workplace is a preferred site for the acquisition of these soft skills in addition to being a site for the acquisition, or improvement, of task-specific skills.

If many currently unemployed people have low skills levels and little work experience, then South Africa needs more jobs that require no more than these skills levels and work experience.

## 3. Identification of problem: part two: the condition of infrastructure

### *3.1. Extent and consequences of poor condition*

Engineering infrastructure (such as reservoirs, pipes, treatment works, bridges, roads, rail, harbours, and electricity reticulation) supports peoples' quality of life and the economy, if it delivers accessible and reliable services. In order, though, for the service to be accessible and reliable, infrastructure must be operated and maintained to specification. If this is not done, while the infrastructure may continue to exist, the service will deteriorate or may even cease. For example, if water pipes are not maintained the water will leak away, become contaminated and/or pressure will drop. Eventually, the water might no longer flow (Department of Public Works et al., 2007:5).

There is abundant evidence of the widespread poor maintenance of infrastructure in South Africa. Attention to this in the democratic area was first drawn by the CSIR and Construction Industry Development Board (CIDB) in 2006 (CSIR & CIDB, 2006), after extensive research by the CSIR. Year after year subsequently the operation and maintenance of infrastructure has in far too many cases been found to not comply with the required standards (South African Institution of Civil Engineering (SAICE), 2006, 2011, 2017; SAICE, forthcoming; Department of Water and Sanitation (DWS), 2019, 2020; Wall, 2019).

For example, whereas, 'by 2020, 88.5% of households had been provided with a 'basic level of water supply infrastructure', if the minimum reliability requirement (water pressure, and maximum number of interruptions and their duration) was taken into consideration, 'then the 88.5% value reduces to 76.1%' (DWS, 2020:38).

These operation and maintenance shortfalls are particularly visible in 'the quality and reliability of basic infrastructure serving the majority of our citizens [which] is poor and, in many places, deteriorating further' (SAICE, 2011:5). Moreover, many of the so-called service delivery protests have been linked to citizens' dissatisfaction with service interruptions because of the breakdown of infrastructure.

While the government's drive to provide new infrastructure to those who have never enjoyed services is endorsed, the challenge is to supplement this with the maintenance of both new and old infrastructure. It is important to note that the failure of infrastructure has serious consequences for human development, poverty alleviation, addressing inequality, and economic growth (Department of Public Works et al., 2007:3). For a topical example: one of the essentials for people to be able to reduce the chances of contracting COVID-19 is access to water, but it is pointless to urge people 'wash your hands frequently' if the infrastructure is broken.

The cost of not maintaining infrastructure is high. In an increasing number of municipalities in South Africa infrastructure failure is negating the impact of the infrastructure development undertaken to date. Also, whereas the purpose of municipal services such as water supply and roads is supposedly to enhance the quality of life and support the economy, the failure of infrastructure is undermining both. This is happening even in sizeable towns, to the extent that businesses have had to reduce production (and lay staff off) and/or go to court in attempts to force the municipality to provide the quality of service which it is obliged to (For example: Liedtke, 2019). The situation has deteriorated so far in some municipalities that they have been placed under administration by government, and/or specific service delivery

responsibilities have been taken away from them and given to more competent institutions (For example: Ekurhuleni Water Care Company, 2020; Ellis, 2021). In many towns, citizen groups have resorted to undertaking some municipal responsibilities themselves, using funds raised from local ratepayers (For example: Carte Blanche, 2021).

The examples in the paragraph above are all of sizeable towns. Generally speaking the situation in smaller towns and rural areas is just as bad, if not worse.

### *3.2. The need for maintenance workers*

More than one of the State of the Nation Addresses by President Ramaphosa and his predecessors have argued that the construction sector is a known driver of work opportunities (for example, Ramaphosa, 2021). It must be borne in mind, however, that construction activity is subject to periodic economic booms and busts. This pattern is influenced by several factors, principally the fluctuations in the economy, the changes in political priorities, and changing needs. As a stark example: the short-term high demand for construction peaked in the runup to the FIFA Soccer World Cup that South Africa hosted in 2010, but rapidly unwound afterwards, and employment in the construction industry nearly halved (SAFCEC, 2014:43).[2]

Furthermore, most construction jobs, and particularly those at general worker level, last only the duration of a construction project, which could be anything between a couple of months and, in relatively few cases, two to three years. The worker must then find another job which, in times of a downturn in construction activity (such as the present time), is difficult. An unskilled person has little chance of finding another job. Someone with skills is better placed to secure a job – thus, it is imperative that learning becomes part of work.

Much construction activity is concentrated geographically; moreover, once a project is complete, attention shifts to a new site, where the local community will invariably insist that the labour force be drawn from their ranks. In contrast to new construction, infrastructure *maintenance* needs to take place regularly throughout the lifespan of that infrastructure. Whereas engineering infrastructure exists in all corners of the land, maintenance is needed across the nation at all times, creating considerable potential for sustained employment and associated lifelong learning.

The National Infrastructure Maintenance Strategy stated in 2007 that:

> Based on a conservative estimate of 12 equivalent full time jobs per million Rand (six direct and a further six indirect or induced), it is estimated that a maintenance budget of R 20 billion will provide employment to approximately 240,000 people for a year. (Department of Public Works et al., 2007:6)

Much of the maintenance, especially of basic civil engineering infrastructure such as roads, buildings and water and sanitation infrastructure, can only be done, or can best be done, by labour-intensive methods, and/or by workers who need have only entry-level skills initially, but which can be developed further.

## 4. Formulation of hypothesis

The potential for job creation in infrastructure maintenance is high, especially of jobs for those with low skills, but for this potential to be realised, substantial effort must go into managing the process and controlling the quality of the maintenance (Wall & Ive, 2017).

As noted above, the CSIR was the first national institution to draw attention to the poor maintenance of infrastructure. (Subsequently, the CSIR co-authored the National Infrastructure Maintenance Strategy (which was approved by Cabinet) and, among other related activities, provided the bulk of the research underpinning the first three SAICE infrastructure condition report cards.)

In the course of many of its early site visits to investigate infrastructure condition and asset management practices, the CSIR team could not help noticing that in the same area – perhaps even in the same street or block – there were many instances where tap water was unsafe, or at best suspect, but there was never any reason to doubt that the petrol dispensed by a filling station attendant was to the required standard. Similarly, the food from a takeaway was automatically assumed to be safe to eat, but the municipal public toilets were dirty and clearly unhygienic.

The team questioned why this should be so. At first glance, it was counterintuitive. For example, the source of the petrol was likely to be an oil well in some far-off country, and the product would have been extracted, refined by highly technical processes, and handled by several intermediaries before it arrived at the filling station – a complex production and supply chain, indeed. In contrast, the source of the water was relatively close at hand, and the treatment process was a far simpler one. While it would seem that the scope for error in the petrol production and supply chain was far greater, somehow it was very seldom not error-free – however the much shorter and arguably simpler water production and supply chain too frequently broke down.

It did not take long for the CSIR team to deduce that the key difference was the institutional model. On the one hand, a model with strongly inbuilt incentives to perform to given standards, carefully designed to minimise inefficiencies, and with high levels of accountability. On the other hand, a model with weak performance incentives and, often, many operational inefficiencies – with (usually) very little in the way of accountability for poor performance.

The thought arose: could the ‘good’ operational model (that is, ‘good’ from the point of view of service delivery and customer satisfaction) be adapted in order to improve the operation of some, at least, types of basic municipal services?

Given that the operational model of filling stations and takeaways (and many other private sector service delivery businesses) was typically one or another variation of the franchising concept, the following hypothesis was formulated:

> That a social franchising[3] model could improve the operation (including – importantly – the maintenance) of some types of basic municipal services, while facilitating the employment of people with low skills levels and little work experience, and training them.

This article outlines a two-decade-long series of research and development initiatives, steadily evolving both the soundness and scope of the social franchising model as applied to the operation and maintenance of low-technology infrastructure – while at the same time creating jobs, training skills, and nurturing emergent micro-businesses.

The model was originally formulated by the CSIR and was subsequently developed by it in collaboration with the Water Research Commission (WRC –, the South African government agency for water and sanitation research and development), and other parties. In recent years, the WRC has become the champion of further development.

The model involves creating partnerships for skills development and job creation, based on franchising principles relating to quality control and mutual incentives (Wall & Ive, 2010).

**5. Literature survey**

Having established the hypothesis on the basis of observation, backed by the CSIR team's considerable experience in infrastructure asset management and its in-depth understanding of the reasons for neglect of infrastructure, the literature survey effort was from the start of work on the concept directed so as to learn more about:

- franchising in general and especially social franchising;
- social franchising in the health sector;
- social franchising as applied to the operation and maintenance of water and sanitation infrastructure;
- the technology and health aspects of operation and maintenance of small-scale water and sanitation infrastructure; and
- matters such as relevant contracting procedures, budgets and payments.

The first CSIR study (CSIR, 2004), drawing on interviews with franchisors and franchisees, and on publications such as those by FASA (the Franchising Association of South Africa), the Franchise Advice and Information Network (FRAIN) (2003a, 2003b), and Parker (2003), described commercial franchising, its principles and how it works, what it is best applicable to, and its successes and failures and the causes thereof.

Little could be found in the literature of the time on franchising as applied to the water and sanitation sector – simply because, as far as could be ascertained, no activity of the type had taken place. Not even the then most comprehensive texts on water services contracting out made mention of franchising (World Bank, 1997; Moriarty et al., 2002; Sansom et al., 2003)

In terms of case studies, reviews of achievement, and guidelines in respect of water services provision, there was a very extensive body of documentation to draw from, even when franchising was not mentioned (For example: Gariba, 1998; Troyano, 1999; Colligon & Vezina, 2000; Tynan, 2000; World Bank, 2001). Some, but not all, focused on what are conventionally referred to as 'independent water and sanitation providers'. Despite absence of references to franchising, these publications were valuable sources of information on, inter alia:

- the problems facing any providers of water services to towns and rural areas, and
- the potential of independent water services providers (both for-profit and not-for-profit providers) to supply small towns and rural areas (CSIR, 2004).

This need for ongoing support and nurturing of small independent service providers was a common theme.

About franchising specifically: in 2002, after the CSIR had already identified the social franchising model, the World Bank published a description of 'management models with the most potential' for 'small towns and multi-village initiatives'. The franchising 'management model' was concisely described as follows (CSIR, 2004):

> Under a franchise arrangement the franchisor develops an operating plan and procedures under a brand name or logo which becomes synonymous with high-quality service, and commits to ongoing support and guidance to small-scale private operators in critical areas of management and operation and maintenance, in

> exchange for a share of the revenue. Although composed of many independent units with relatively small revenue bases, a franchise network has the power and resources of a much larger enterprise. By introducing an individual with entrepreneurial flair as the operator/franchisee, there is also a built-in incentive to operate the water supply efficiently and in a businesslike way. Franchising also best leverages the skills of the limited number of experienced water managers and operators found in most countries. (World Bank, 2002)

Moreover Roche et al had the year before identified that (CSIR, 2004):

> Franchising in small town water supply is a new and untested idea. There are no franchisors and franchisees currently operating in the sector in developing countries and no direct examples to follow from more developed countries. … A pilot project could be developed as a means of testing franchising … While it is recognised that there will certainly be obstacles to developing and operating a franchise system, no better concept is currently being proposed. (Roche et al., 2001 – the pages are not numbered)

Roche perceptively continued:

> The principal challenge appears to come from problems inherent in small town water supply as a business, per se, and is not specific to a possible franchise solution. (Roche et al., 2001 – the pages are not numbered)

The second CSIR-led study, that which culminated in the set of reports published by the WRC in 2010, took the literature search much further forward. The resultant reports described the findings of quite a number of interviews which the team set up to gain further understanding of what were perceived to be useful practical examples of alternative (to the public sector provision) institutional arrangements in the water and sanitation sector in South Africa.

The arrangement in the water and sanitation services sector in South Africa that was at the time in its own way closest to franchising was that in which a WSA (water services authority) appoints a Support Services Agent (SSA) to support smaller locally based WSPs (water services providers) – but with the fundamental difference to social franchising that the SSA is generally a ‘not-for-profit’ organisation, and that the WSPs supported are also generally ‘not-for-profit’ organisations, such as CBOs (community-based organisations). An example is where the Alfred Nzo District Municipality, a WSA in the Eastern Cape, opted for a process of developing community-based WSPs, supported by SSAs, one of which was the Mvula Trust (Mvula Trust, 1999, 2001, 2002a, 2002b; Vapi Consulting, 2002 provide a mine of information on the working of SSAs at the time) (CSIR, 2004).

The third study, which culminated in the 2012 set of CSIR/WRC reports, being entirely about the experience with the pilots, did not incorporate surveys of the literature, nor references to publications other than those (i) related directly to the pilots and to the municipal and provincial government context within which they operated, and (ii) then-recent information on franchising (commercial and social) and developments in operation and maintenance of small-scale or low-technology water and sanitation infrastructure worldwide (Wall & Ive, 2013).

While the author is no longer directly involved with the implementation of social franchising in the water and sanitation sector, he remains nonetheless an interested and active observer of developments, and has been or currently is a member of reference groups for the several WRC projects which are taking the concept further forward. Of most interest have been (i)

new directions in which the concept has already been or is being taken, (ii) new directions into which promoters of the concept have attempted to take it, and (iii) the fortunes of Amanz' abantu and Impilo Yabantu.

In (i) 'new directions', of greatest interest have been the work of Impilo Yabantu with the African Water Facility of the African Development Bank (Jack, 2019; Klu, 2019; N Naidoo, 2019; Wilkinson, 2019), and the work of teams led by Cottingham (Cottingham & Neethling, 2021) and Still (Still & Neethling, 2021). In (ii) of greatest interest have been the efforts, over a number of years, of eThekwini Water and Waste Department to introduce the social franchising concept for the operation and maintenance of their communal sanitation facilities. Interest has also been shown by a number of other municipalities, including Cape Town. (The author has been involved in both the eThekwini and the Cape Town initiatives.)

## 6. Methodology

### *6.1. Building the business case*

The first CSIR study (CSIR, 2004) hypothesised, based on observation and on a limited number of interviews, that a social franchising model could improve the operation (including – importantly – the maintenance) of some types of basic municipal services.

The next step of the research investigated key aspects in greater depth before building a business case for pilot testing. Pilots would require significant operational and capital funding, and therefore the business case needed to be strong enough to attract participants and funding from outside the CSIR. Accordingly, a set of studies was undertaken, covering (i) the concept of franchising and its relevance to water services, (ii) a review of policy, regulation and legal aspects deemed to be possibly significant to implementation, (iii) modelling of selected water services operational elements, (iv) an institutional review, (v) criteria for the selection of potential water service franchisors, partnerships and franchisees, and finally (vi) a desktop business analysis case study of the concept applied to a sector (schools sanitation operation and maintenance was chosen) (Wall & Ive, 2010; WRC, 2010a, 2010b, 2010c, 2010d, 2010e, 2010f).

The studies identified that social franchising is especially suitable for communities with large poor populations which are in need of infrastructure services and are also looking for employment and opportunities to develop technical and entrepreneurial skills. The concept of social franchising provides opportunities for linking local economic development, job creation and skills development with the basic municipal and community services delivery (Wall & Ive, 2013).

The concept, as it has been implemented in the Eastern Cape Province of South Africa for more than a decade, provides appropriate training, a quality management system and procedures, and the backup of the skills of the franchisor. The process commences by the franchisor, an established company with the necessary expertise, identifying residents of the target area who have the basic skills and dispositions needed to own and manage micro-businesses and who, once they have been exposed to training, are willing to enter into business agreements. Key enablers are the willingness of the owners of the infrastructure to outsource their responsibilities for routine servicing, and the ability of these authorities to procure, appoint and direct franchisees to undertake the work under the guidance of the franchisor (Wall & Ive, 2013).

Traditional institutional approaches to infrastructure operation and maintenance (for example, in-house responsibility for this) have incorporated the building of capacity and the development of skills in attempts to improve service delivery. However, many of these

approaches have had limited success because they have not enjoyed sufficiently strong incentive structures and support systems. In contrast, the innovative and practical social franchising approach is built on a robust foundation of mutual support and incentives (Wall & Ive, 2013).

### *6.2. Genesis of the pilots*

These desktop studies succeeded in building a business case that was strong enough to win the co-operation of the Eastern Cape Province Department of Basic Education (DoE), to attract funding from both WRC and Irish Aid, and to attract the interest of the large Eastern Cape-based water and sanitation infrastructure developer, Amanz' abantu Services Pty Ltd. This led directly to the schools pilot described in more detail in the next section.

This model has successfully addressed – and continues to address – infrastructure-related problems of types widely encountered in South Africa. In 2009, the DoE, facing a crisis brought about by the lack of maintenance of school water and sanitation facilities over many years, agreed to participate in a pilot programme for the servicing of all water supply infrastructure and toilets at 400 schools (a total of more than 5000 toilets). Sometime after that, having noticed how effective this intervention was, the nearby municipality agreed on a pilot to service 400 household toilets. Both pilots were very successful on all accounts (Wall & Ive, 2013).

In addition to testing the social franchising concept, these two extensive pilots (one at schools, and one for private households) brought about both:

- the maintenance of selected infrastructure, and returning it to service; and
- the job creation and skills development of a number of (mostly) rural people, many of whom had never before received training that enabled them to do wage-earning jobs (Wall & Ive, 2013).

## 7. The schools' pilot

A description of the above-mentioned schools' pilot (2009–2013) can serve to outline the social franchising approach as it is applied in practice (Wall & Ive, 2013). Subsequent projects have broadly adopted this approach, even though the type of infrastructure, locality and participants has changed.

The focus of education authorities in the schools' sector in South Africa has arguably been on curriculum development and classroom-based activities. Far too often, little attention has been paid to the essential supporting built infrastructure. Repair and maintenance issues are often sidelined or ignored. As a result, much of the schools' water and sanitation infrastructure is either dysfunctional, requiring radical interventions (extensive refurbishment or total rebuilding); or serviceable but deteriorating, and likely to deteriorate further if not supported by good operation and maintenance.

The negative impact of poor sanitation and the non-availability of clean water in schools deprive learners of the infrastructure support they need to enable them to focus on their studies. Moreover, the health and social problems arising from the lack of these basic services spill over into the community. For example, the learners should be witnessing good water and sanitation practices at school and using this knowledge to assist their parents to improve the situation at home. However, this often does not happen because the practices at many schools are so deplorable.

In 2009, the CSIR, Irish Aid, WRC, DoE and Amanz' Abantu Services contracted to implement a three-year pilot for the routine servicing of water and sanitation facilities at 400 schools in the Butterworth Education District of the Eastern Cape province. The scope of work was agreed, and training and operation plans were developed. Advertisements called for parties interested in becoming water services micro-entrepreneur partners to come forward. The parties had to be resident in the Butterworth area for two reasons: (i) to ensure that the work would be done by local people drawn from the communities that would be served; and (ii) to minimise teams' travelling time and cost to the schools to be serviced.

Prospective local micro-business partners were screened to assess their suitability as franchisees. The selected aspirant franchisees then received initial training from Impilo Yabantu (in the Xhosa language, 'hygiene for the people'), a subsidiary, of Amanz' abantu Services which had been formed to fulfil the role of franchisor. They were assisted to set up their businesses, and then the trainee franchisees, almost all first-time entrepreneurs, together with the franchisor met with the DoE Butterworth District staff and school principals in order to plan their schedules and agree on work orders.

The trainee franchisees employed other local people, many of whom were previously unemployed. Under the guidance of the franchisor, these newly formed teams undertook the initial cleaning and, after that, the regular routine servicing of the water and sanitation facilities at the schools. Franchisor Impilo Yabantu continued throughout the pilot to provide mentoring and non-formal further training as and when necessary.

The cost of methodology development, training and further assistance for the schools pilot, and the cost of documentation, was borne by a combination of external funding from the Irish Aid and WRC, and corporate social responsibility contributions from Amanz' Abantu and the CSIR. Each of these organisations invested resources because of their desire to improve the maintenance of infrastructure, service delivery, and to develop skills and create jobs.

As is essential, the maintenance services which the franchisees provided in the pilot were paid for by the infrastructure owners (the schools authorities or municipalities) from their (the owners') budgets annually allocated for the operation and maintenance of infrastructure. If this were not done, the maintenance programmes would not be financially sustainable.

The franchisees were required to operate under the Impilo Yabantu brand and to conform in all respects with the operating model that it had developed (and which it has continued to develop further).

The franchisor established and trained an in-house team. One purpose of this team was to provide the franchisor with benchmark costs and an opportunity to further develop knowledge and skills, and to test any new procedures. The team's other role was that of backup should any of the franchisees fail – it would temporarily provide the contracted service until the current franchisee was resuscitated or a new franchisee was appointed.

The franchisor also instituted a compulsory quality management system to ensure that regular audits were undertaken, and to provide a system that enabled the franchisor to manage the documented work procedures. In the pilot (and all subsequent work), spot checks were conducted by the franchisor on randomly selected schools, to ensure that the contracted standards of work were upheld.

An important component of the service provided by the franchisees was the inspection of, and reporting on, the serviceability and suitability of the infrastructure facilities. Reports compiled from these inspections were, with photographs, submitted to the DoE district managers at monthly meetings, and maintenance and repair lists then agreed upon for

implementation in the subsequent month. In this manner, ongoing service relationships were developed between the franchisees, the school principals, and the DoE managers.

Each maintenance order was in effect a small contract for between R10 000 and R15 000 (at the time, USD 1200–1800). The franchisees billed the schools (or the DoE on certain schools' behalf) each time they had finished the work. As noted earlier, this funding for maintenance came from schools' budgets – additional funds were not required.

The franchisor played a critical role during the pilot, not only managing the administrative part of the process, but also randomly checking on franchisees' quality of work, and processing the vast array of 'before and after' photographs from each school. Another key role of the franchisor in the pilot was to speedily address problems – for example, payment delays or equipment failure.

The franchisor compiled the practical guidelines and operational strategies for the whole partnership. Also, in order to accommodate variations in the types of toilets and top structures, the franchisor designed and built a range of tools for accessing pits and for the disposal of faecal sludge and other waste. For example, when access to pits could only be gained by removing the toilet top structure, the franchisor designed and built a trolley that enabled the structure to be manhandled to one side. It is unlikely that a stand-alone micro-business would have had the expertise or resources to do this. Thus, the franchisor's ability to innovate on behalf of the franchisees is a significant advantage of the social franchising approach.

The skills the general workers employed by the franchisees learned during the pilots were of a technical nature at the most basic levels – they were not taught the business-type skills. Nonetheless, for many of them, this was the first time they had been taught skills which enabled them to earn a living wage.

The primary objective of the Butterworth schools' sanitation and water servicing pilot project was to develop and test a social franchising approach which could be scaled up to roll out similar services to most of the more than 6000 public schools across the 23 education districts in the Eastern Cape. Without question, the project succeeded in achieving its objectives, and the research and development funding was usefully spent.

The parallel household toilet pilot, under the auspices of the Amathole District Municipality, was just as successful (Wall & Ive, 2013).

## 8. Results and discussion

### *8.1. Indicative numbers of benefit and beneficiaries*

The social franchising initiative, initially implemented on a pilot basis, has over the years since then been implemented in a number of contracts of varying scope and duration. With between five and 10 employees per franchisee, and anything between 15 and, in periods of no activity, zero franchisees employed since then, there have at times been nearly 200 persons employed. However, no records have been kept of the total number of person-days of activity, nor would it be simple to calculate this number on the basis of franchisees' days worked, because even for a single franchisee working in a particular area, the size of the workforce could vary depending on the tasks planned to be undertaken on any particular day.

Not even the African Development Bank (AfDB) contract which ran between May 2017 and October 2018, and which included servicing of schools sanitation facilities at 302 peri-urban

schools, health and hygiene education, menstrual hygiene education, and a biochar pilot project for demonstrating the safe treatment and beneficiation of faecal sludge, kept records of total person-days. However, some of the other records which it kept would be of interest – and these statistics can be taken as indicative of much of the work done so far, the initial pilots included.

As follows:

- for 302 schools: toilet cleaning, minor repairs (including door replacement and roof repair), desludging, provision of handwashing facilities;
- number of learner beneficiaries: 94 000;
- number of educator beneficiaries: 2000;
- all of the (five) franchisees progressed in their CIDB grading, generally at least by two levels, e.g. from CIDB 0 to CIDB 3 or from CIDB 1 to CIDB 4; and
- over the 18 months, the franchisees earned between R 0.5 million and R 1.1 million[4] each (Klu, 2019:3–5).

### *8.2. Reliable income stream is vital*

Whereas the pilots developed useful and replicable business plans, with tried-and-tested operating procedures and learning pathways, for the maintenance and routine servicing of the sanitation and water facilities commonly found in the small towns and rural areas of the Eastern Cape, scaling up has to be financially viable. That is, the franchisees have to generate sufficient revenue to cover all costs, including both a reasonable wage for the franchisee owner and fees for the franchisor. This income is also needed to build a prudent level of reserves to cover lean times, such as when clients take too long to pay, and/or work is slow to come (Wall et al., 2013:456).

The franchisor and franchisees are mutually dependent in many ways, particularly with respect to financial viability. Thus, for example, if the franchisees cannot cover their costs, the franchisor would find it difficult to provide them with services going forward, or even to remain in business itself.

The owners of infrastructure must pay on time and in full for the services rendered. Regrettably, the DoE has been found to be not always willing or able to pay service providers and suppliers (any of their providers and suppliers – not just the franchisees) on time and in full.

Franchisees are not unique in wishing to be paid in order to stay afloat. All types of outsourcing by public sector bodies are jeopardised if they do not pay in strict accordance with the contracts. Everything else being equal, stand-alone micro-businesses would usually go insolvent first, followed by franchisees (which, because of the support of the franchisors, can hold out longer), and thereafter by larger businesses (Wall et al., 2013:456).

### *8.3. Additional services*

In an early evolution of the social franchising approach, in addition to the maintenance work on toilets, the franchisees also repaired the toilets and rainwater-harvesting facilities at the schools. The franchise has since progressively expanded its operations to provide a wider range of services, initially by introducing additional services such as solid waste disposal, a natural extension to the on-site sanitation programmes, especially given that, without a collection service, pit toilets rapidly fill up with inorganic waste. This developmental work is typical of that expected of a dynamic franchisor, which needs to have a broad vision and to conceptualise and pioneer potential opportunities for franchisees (Wall et al., 2013:457).

The approach has since become more ambitious in several ways, including that the faecal sludge is now wherever possible put to good use. In particular, the programme funded by the AfDB involved franchisees in (i) recycling bio-solids to beneficial by-products, and (ii) teaching hygiene education to schoolchildren. (A key aspect of the hygiene education has been the creation of 240 ‘sanitation clubs’ at schools, with more in the pipeline. These clubs are ‘comprised of teachers and learners that together with the ‘sanipreneur’ oversee the school programme’ (N Naidoo, 2019:4).)

In this recycling approach, the franchisees visit schools to collect the biosolids using one or other type of vacuum tanker They then treat the biosolids using extensive heating by pyrolysis that kills bacteria and pathogens and turns the biosolids into safe biochar[5] for soil amendment. Biochar effectively improves the soil by providing better retention of organics and nitrates in the soils. It also provides a host for micro-organisms that assist plants in breaking down nutrients in the soils, thereby helping the roots to absorb these nutrients.

Impilo Yabantu has consistently played the franchisor role, including developing innovations such as the recycling described above, and empowering the franchisees to take then up (N Naidoo, 2019).

### *8.4. Data by phone*

The amount of paperwork generated in the early days was a serious concern. Impilo Yabantu has since developed mobile phone technology to assist with reporting service problems, and with information-gathering and data collection. It also developed a software programme for franchisees to lodge reports of problem areas. One of the mobile applications is used to collect data, map service areas, and monitor the repairs being undertaken (Kanise et al., 2020).

### *8.5. Scaling up*

The initial pilot started with 10 trainee franchisees. A decade later, the best of these – most of whom are women – are capable of working with minimal support from the franchisor, and have mostly established their own companies, giving their businesses a more robust structure with greater credibility.

> Speaking at the Women in Water and Social Entrepreneurship Summit under the broad theme ‘From Research Science to Impact’, Water Affairs Deputy Minister … said the work being done by the women was phenomenal ‘This has been an eye-opening experience’, she said. (Tanana, 2018:[np])

Because of the DoE’s budget limitations and capacity constraints, and, most recently, because of covid-19 and the associated lockdown restrictions, the schools’ sanitation and water programme has not expanded as extensively as was initially planned. However, it has continued at a fluctuating number of schools, at times more than 1000, mostly within Buffalo City Metropolitan Municipality and Amathole District Municipality. Further work, mainly consisting of the maintenance of several thousand household and communal ablution facilities, has mostly come from contracts with those same two municipalities.

Experience has shown that some candidate franchisees do not progress beyond the trainee phase, and others drop out when work is slow to come. Others own alternative businesses (e.g. plumbing) to tide them over when school and municipal work peters out. However, those who continue are, as always, closely monitored and mentored by franchisor field staff, while others in the franchisor team assist them with health, safety, and technical operations procedures (Wall & Ive, 2013).

The social franchising described in this article has strongly demonstrated its relevance for learning and work. It also showed that infrastructure maintenance has great potential for employment and for learning – over and above its main purpose, which remains service delivery (Klu, 2019).

Most of the skills transferred thus far, the business skills acquired by the franchisees excluded, are at the basic or near-basic level because of the nature of the tasks involved. However, because of the high levels of unemployment in South Africa, there is a very great need for initiatives such as those described in this article to be replicated, so that the projects then undertaken not only improve the condition of infrastructure (and ensure more reliable service delivery), but also create further jobs and enable the skills upgrades described (Wall & Ive, 2013).

If in the right hands (WRC, 2010e), the social franchising approach, through training and mentoring, and also thanks to the strong incentives built into the system, ensures quality and reliability of service.

Whereas the bulk of the application of this approach thus far has been on low-technology sanitation and water infrastructure, there is clearly great potential for the social franchising model to be applied to maintenance and/or operation of other infrastructure (WRC, 2010e[6]).

Moreover, the maintenance of much infrastructure installed at households and institutions[7] is proving to be beyond the capability of the owner/beneficiary. It may also in some instances be desirable that the owner/beneficiary does not undertake the maintenance him/herself but rather allows this it to be done by trained and competent persons. Franchisees trained in this kind of work would be very suitable.

Many more maintenance jobs could be created if the owners of infrastructure chose to budget enough to protect their infrastructure assets. Unfortunately, few do – most set aside woefully inadequate budgets for maintenance purposes (Wall, 2021).

### *8.6. Latest areas of research*

A number of technological innovations have over the years been introduced to the water services franchise model. Usually, these have been innovations to deal with sludge disposal or, taking this further, to turn the sludge into a useful product. Producing biochar, as mentioned above, has been one of these innovations.

Most recently, late in 2020, the WRC agreed to fund two studies of a business development nature rather than of a technological development nature. As the WRC coordinator mentioned at the inaugural reference group meeting of the first of these, the social franchising partnership concept for infrastructure operation and maintenance is, in the WRC's mind, 'proven', and ways are being explored to use this institutional model to build businesses around some of the steady stream of technological innovations emanating from, or being tested by, research funded by the WRC.

The purpose of one of these studies, scheduled to run for at least two years, is to establish if it is possible to build a sustainable community-based franchise business entirely on work sourced directly from, and paid for by, households as opposed to by government.

The purpose of the other study, also scheduled for at least two years, is to establish if there is motivation and scope for large companies to invest in ongoing operation and maintenance activities at communal sanitation facilities – including schools, community ablution blocks in informal settlements and community clinics – employing franchisees to do the work. The

companies would earn revenue – for example, they could be granted the right to advertise at the facilities. Costs not otherwise covered, if any, could be met from the corporate social investment budgets that many companies set aside as a matter of course.

Both of these pilots are, at the time of writing (July 2021), well under way (Cottingham & Neethling, 2021; Still & Neethling, 2021).

## 9. Conclusions

To recall, the hypothesis posed so many years ago, at the beginning of the research and development described in this article, was:

> That a social franchising model could improve the operation (including – importantly – the maintenance) of some types of basic municipal services, while facilitating the employment of people with low skills levels and little work experience, and training them.

Unquestionably, the verdict must be that, indeed, 'yes: a social franchising model can improve the operation and maintenance of some types of basic municipal services'.

Scans of literature played a minimal role in formulating the hypothesis, which evolved in the first instance from observation in the field, then from discussion with experienced potential participants, but came to the fore in fleshing out the concept – especially at the time of the second CSIR-led study. Since then, however, development has been driven almost entirely by professional judgement (and a dose of trial and error), limited only by local need for the service and local budgets and capacity.

The social franchising approach has restored to service many more schools toilets than any other single schools water or sanitation maintenance innovation in South Africa of at least the last 20 years. (It has also deservedly won a number of awards.)

It has succeeded in comparison to other approaches, and it has succeeded at scale. (It has over the years restored to a usable condition the sanitation facilities of the order of 1500 schools, average (say) 500 pupils each – this constitutes restored sanitation to three quarters of a million learners. Moreover, social franchising methods have in many instances continued to keep these facilities in a serviceable condition.) On top of that, it has restored the sanitation facilities at many households.

The driving force behind success is the franchisees' incentive to achieve set standards, be paid when they achieve these standards, and grow their own businesses. Reinforcing this arrangement are systems, managed by the franchisor, which ensure quality control over the operations, sustainability through economically viable pricing systems, and responsible health and safety and environmental management systems.

Furthermore, the franchisees are locally led and deliver services locally – that is, it is within the communities served that they create jobs, enable transfer of workplace skills, and retain income. Communities receive the service they need, and members of those communities can be involved in sustainable enterprises of which they can be proud.

The social franchising concept has proven very successful in incentivising a professional approach to work and skills transfer in the infrastructure services sector to which it has been applied. On the one hand, restructuring the relationships between the user, client and service provider transforms an often-neglected essential service into a contracted service.

On the other hand, the contract between the franchisor and the franchisee offers a stable relationship, as opposed to the larger entity hiring or partnering with individuals who simply leave if alternative employment is offered. Professionalising these services not only creates job opportunities and encourages potential micro-entrepreneurs to move into this sector, but also gives individuals a reason to take pride in having a career in a sector (sanitation), which may otherwise carry the stigma of being undignified and unrewarding. It also provides a training route that is directly linked to employment.

Being a successful franchisor operating at the lower levels of the economic pyramid requires patience, while at the same time insistence on compliance with soundly designed standards. Unlike working with contractors, where there are contracts with clear-cut conditions and penalties for non-performance, working in a social franchising context requires the franchisor to nurture and mentor the franchisees to ensure the maintenance of an environment conducive to stimulating learning and the growth of all partners (Wall et al., 2013:458).

Apart from providing essential operation and maintenance services to public sector authorities who are almost invariably short of skills, the social franchising partnerships create jobs, provide training and on-the-job learning, and nurture micro-entrepreneurs. Projects must be structured in a way that when they come to an end, the franchisees involved would have developed into sustainable entities, with the necessary skills and sufficient workload and income streams, to continue as viable businesses (Wall et al., 2013).

It is clear that the concept of social franchising for water services operation and maintenance can fulfil the requirements of many of South Africa's national economic goals, notably:

- creating jobs at the lowest economic levels where unemployment is highest and workplace skills very limited;
- ensuring that every workplace is a learning space;
- creating and nurturing micro-businesses;
- enabling broad-based black economic empowerment; and
- improving service delivery, through infrastructure maintenance activities that increase the quality and reliability of services, and the availability and utility of the infrastructure (Wall & Ive, 2017).

The CEO of the WRC has on numerous occasions made clear his institution’s ambitions for the concept. For example, in 2019, he wrote of ‘amazing individuals’ who have ‘earned the title of sanitation entrepreneurs or “sanipreneurs”’. Speaking of the ‘remarkable concept’ of social franchising ‘developed and piloted in the Eastern Cape province’, the sanipreneurs, ‘the majority of whom are women’, ‘have already had a very positive impact’. ‘All of the sanipreneurs have started off [on] a zero-base using the central support system provided by Impilo Yabantu. With each company having an average of five employees, the cohort of companies is supporting over 100 families in the programme.’

> It is a model that is easily exported beyond schools into other public facilities and the community at large. And it is a model that has the potential to thrive on the African continent. In addition to the achievement of the sanitation SDG, this kind of intervention directly engages the triple challenge of poverty, unemployment and inequality. (D Naidoo, 2019:4–5)

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**Notes**

1 Africa's largest research and development organisation, public or private sector.

2 From 87 000 in 2004 to 175 000 in 2009, falling to less than 100 000 the following year.

3 The social franchising variant of the commercial franchising concept is defined as: ‘the application of commercial franchising concepts to achieve socially beneficial ends, rather than profit’ https://en.wikipedia.org/wiki/Social_franchising.

4 Then USD 36 000–80 000.

5 Char is a carbon-rich product formed when plant- or animal-based organic material such as wood, faecal matter, etc. is heated in a closed container with little or no available air. Char originating from biomass and intended for agricultural use is known as biochar (N Naidoo, 2019:5).

6 For examples, see especially pages 45 and 90.

7 For example solar panels, installed in great numbers on RDP houses.

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