

The N2 scrap collectors: assessing the viability of informal recycling using the sustainable livelihoods framework

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Abstract A group of women in the rural Eastern Cape Province of South Africa earns a living collecting scrap metal and paying to transport it for sale in Durban. The sustainability of their livelihood is in question because of an ever-shrinking supply of recyclable metals, fluctuating commodity prices, and the logistical difficulties of transporting the materials to buyers further along the recycling value chain. Using the sustainable livelihoods framework, this paper highlights the opportunities and challenges facing these informal recyclers. It shows how the women have fashioned a livelihood practice in the context of widespread rural poverty, isolation from recycling markets, and limited community assets. Implications for community development include the need for a participatory sustainable livelihood analysis to evaluate ways to counterbalance the instability and uncertainty involved in informal recycling and to raise the incomes of the women involved in this activity.

Introduction

This paper explores the practice of collecting and selling scrap metal by women in rural areas of the Eastern Cape Province of South Africa. This livelihood practice, though providing the recyclers with an income stream in an economy with few viable alternatives, highlights the challenges faced by those engaged in informal waste recycling. Difficulties in collecting, transporting,

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and selling recyclable material abound. However, despite these challenges, and in the absence of other income-generating opportunities, the women still manage to earn a living through their persistence, ingenuity, and risk-taking.

Using the sustainable livelihoods framework (SLF) to structure our investigation, we assess the viability of scrap recycling as a livelihood practice to highlight various dimensions of the activity and the challenges they present. We begin with an overview of informal recycling. We then present a summary of the SLF. The research methodology and results follow, with the latter organized according to the four dimensions of the SLF. We end with a discussion of the implications of this research for community development.

Informal waste recycling

Waste recycling has become an important livelihood strategy for millions of workers worldwide. It is estimated that one per cent of the world's population is supported through the collection and sale of recyclable waste – much of this in the informal sector (Medina, 2008). Recycling occurs through a value chain – a sequence of operations that result in the recovery and reuse of materials from waste. The recycling value chain links the production of post-consumer waste (i) to its collection, sorting, and transport and (ii) to its processing before becoming an input in production processes. Value is generated at each stage, although with differential benefits to the actors involved. In general, the further away actors are from the production of post-consumer waste, the greater their ability to extract value from recycling. The collectors, therefore, find themselves in a highly precarious situation; their incomes are based directly on their work rates, yet subject to the local availability of recyclable materials as well as the global fluctuations in the commodity prices of the materials they collect. Furthermore, if they lack the means to transport recyclable material to end users at the opposite end of the value chain, they will face significant barriers to market access that can only be surmounted by engaging in business relationships with actors further along the chain. This dependence and the uncertainty of collections and their prices, mean that earnings from informal recycling are low.

In South Africa, informal waste recycling occurs in urban and rural areas throughout the country and takes several forms. Street recyclers collect waste from consumers and from refuse left in public spaces. Informal landfill recyclers gain access to the landfill sites where public- and private-sector garbage collection services deposit waste, and there they sort recyclable from non-recyclable waste. The collections of street and landfill recyclers are then taken, often by foot, to buy-back centres (BBCs) that are a second stage along the value chain (Viljoen et al., 2012). In some areas, the BBCs may also acquire

collections from informal recyclers at designated pick-up points. The BBCs then sort, combine, crush, package, and arrange transport of these materials to recycling facilities. Further along the chain are the large recycling facilities and the manufacturers that use recycled materials as production inputs.

In addition to street and landfill recyclers, a third type of informal recycling is occurring in rural areas of the Eastern Cape Province where women are engaged in scrap-metal recycling. They too sell their materials to BBCs, but to do so at an adequate price they must transport the materials hundreds of kilometres to Durban, KwaZulu-Natal. The women can be found along the N2 Highway between Butterworth and Mt Frere with piles of scrap metal waiting for trucks travelling to Durban (Photo 1).

Waste management and collection in South Africa is a deeply gendered activity, with women largely excluded from waste collection activities in the increasingly privatized formal sector (Samson, 2010). Informal recycling, on the other hand, has lower barriers to entry and a wider range of occupations may be open to women (see Samson, 2009b; cf. Nzeadibe and Adama, 2015), although in conditions that are hazardous and precarious. Recycling is a volume business, and the earnings of informal recyclers are a function of the hours worked, the intensity of work during those hours, and the amount of waste available that is suitable for recycling (Viljoen, 2014). The position of informal recyclers along the recycling value chain, as well as the impediments they face in accessing markets, raises important questions about the sustainability and viability of scrap-metal collection as a livelihood practice.



Photo 1 Collectors with their scrap next to the highway (All photos were taken and used with permission of the women.)

Source: Authors.

The sustainable livelihood framework

This study uses the SLF to examine the viability of scrap collecting as a livelihood practice. The SLF, which has been widely used by international development agencies, is a rubric to conceptualize livelihoods in a holistic way. Within this framework, a livelihood is sustainable if it

comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term. (Chambers and Conway, 1991, p. 6)

The SLF can be used to deepen understandings of the lived experiences of the poor, in particular by conceptualizing how they navigate a context of vulnerability by utilizing combinations of livelihood assets (Chambers and Conway, 1991; Nzeadibe and Mbah, 2015). The SLF has four dimensions (Fig. 1) and each will be used to examine the practice of scrap-metal collection by women in the Eastern Cape.

- Dimension 1, the context of vulnerability, refers to external environmental factors such as natural disasters and economic downturns that affect wellbeing, but over which people have no control.
- Dimension 2, livelihoods assets, covers human, social, financial, physical, and natural capital. Aspects such as being poor, being unskilled, uneducated, and having ill health lessens a person's ability to cope with environmental hazards and material hardships.
- Dimension 3, transforming structures and processes, includes the institutions, policies, and legislation that impact livelihoods.

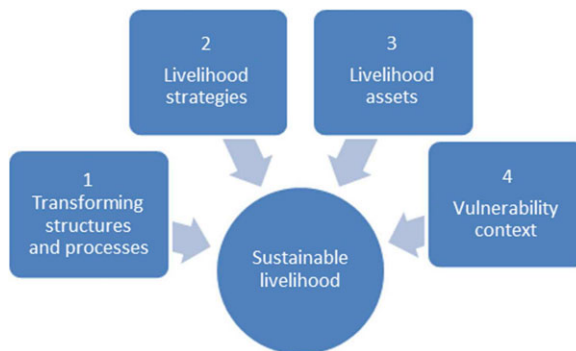


Figure 1 The dimensions of the sustainable livelihood framework
Source: DFID (1999).

- Dimension 4, livelihood strategies, refers to the activities and decisions people make in order to achieve their livelihood goals.

Methods

A case study research design was used to document and analyse the practice of scrap-metal collecting. The project proceeded in three stages:

Stage 1: Reconnaissance

The authors travelled to the Eastern Cape to meet the women who stand along the highway with their collected scrap metal. The women reside in villages that are approximately 400–600 km from Durban, where they sell the scrap.

Stage 2: Fieldworker interviews

During stage 2, two isiXhosa-speaking students from the Department of Social Work at the University of the Western Cape were trained to interview the women. Both were from the area and were familiar with some of the women, which helped to establish trust. The fieldworkers completed questionnaires with sixteen women, conducted three semi-structured interviews, and took photographs during the week they spent in the area. This investigation focused on three questions:

- (1) Why do the women travel to Durban instead of selling recyclable waste to local scrap dealers?
- (2) By what means do they travel to Durban and how is this process managed?
- (3) How sustainable is a livelihood that is based on collecting and selling scrap metal to BBCs?

Stage 3: Return visit

Researchers paid a second visit to the area after receiving a call from one of the women. The aim of the visit was to continue data collection in order to deepen our understanding of scrap-metal collecting as a means of income generation. The plan was to conduct a focus group with a few of the recyclers. Upon arrival, however, nearly thirty women awaited the investigators, and the focus group was changed to a large-group discussion. All interviews and discussions were transcribed and analysed according to the dimensions of the SLF.

Results

Dimension 1: The vulnerability context

Risks compromise wellbeing, and those with fewer assets and more precarious livelihoods, such as the poor, unemployed, and underemployed, often

face heightened vulnerabilities (Chambers, 2006). The vulnerability context consists of environmental aspects over which people do not have control, such as natural disasters and economic downturns. The extraordinarily high unemployment rates across South Africa, and especially throughout the Eastern Cape, as well as the drought conditions that have plagued large- and small-scale agricultural production for years, are key elements of the context within which informal recycling has developed in the area. This section, though, will focus on contextual factors that directly affect the collection and sale of scrap metal by informal recyclers. The women identified the following vulnerabilities.

Sustainability of the livelihood

The sustainability of scrap recycling is directly influenced by two contextual factors. The first is the global reduction in the price of steel and other ferrous and non-ferrous metals. As one informal recycler explained, 'In 2010, I sometimes got R4000 (USD 333) [or even] R6000 (USD 500), but now it is down to just over a R1000 (USD 83)'. The second factor is the sustainability of the supply of the scrap. The women indicated that they now have to extend their search for recyclable materials to areas far from their homes. 'Scrap is scarce and [sometimes] you have to buy it and you have to travel far to get it. It is clean here [in the village] and we have to travel to other villages to get more'. With few other ways to securing a livelihood, except for means-tested government grants, the informal recyclers are vulnerable to reductions in prices and supplies.

Health and safety risks

A second vulnerability arises through the health and safety risks facing the women when they transport their scrap to Durban. As will be discussed further in the section on livelihood strategies, collecting scrap, sleeping next to the road unprotected, and then travelling hundreds of kilometres to Durban pose numerous health risks. These include exposure to cold and the development of respiratory problems, exposure to toxins from the scrap materials collected, risks of cuts and scrapes when collecting metals, and exposure to snakes and poisonous insects. Furthermore, the trucks are monitored by tracking systems, so drivers are unable to make many stops. The women travel in the trailer with the load, with little protection during the high-speed journey and unable to signal the driver if there is a need to stop.

Dimension 2: Livelihood assets

Human capital. Human capital refers to the skills, knowledge, ability to work, and good health that enable people to pursue livelihood strategies and achieve their livelihood objectives (DFID, 1999). After the visit from

the fieldworkers, one of the women called the researchers stating that, 'I want you to know three things: (1) we are self-employed and independent, (2) we have cleaned [the village]', and (3) 'we are not the poorest of the poor – at least not anymore!' This statement of resilience and initiative reveals much about why the women started collecting scrap and why they continue to do so. They took the initiative, they acquired knowledge and skills about how to collect and sell, and more generally figured out how to 'make it work'. They are strong, independent and dignified. As another woman stated, 'I love this job so much; I feel that I am self-employed'.

However, the reasons the women must resort to informal recycling are related, in part, to a lack of qualifications that would enable them to secure formal-sector employment. None of the sixteen women who completed our questionnaires had finished grade 12. One did not go to school at all and the others only went as far as grade 10. When asked about the reasons for not completing school, some pointed to family poverty and other hardships; as one said, '... it was because of funds and the loss of my parents'. Another stated flatly, 'No money to go to school'. These responses support the findings of other studies on informal recyclers (Viljoen, 2014; Schenck, Blaauw, Viljoen, 2012; Schenck and Blaauw, 2011) that conclude that poverty and family hardships play a major role in decisions to leave school early. In other cases, it appears that education may have not been regarded as important, either by the young woman or by her family.

Natural capital. In the SLF, natural capital refers to the natural resources available to the poor. The Eastern Cape is a largely rural area and residents previously relied on agriculture for their livelihoods. However, agricultural production has been mechanized, and therefore requires less labour, and subsistence farming, although still important in rural South Africa, is in decline (Neves and Du Toit, 2013). Government grants enable the poor to increase expenditures on consumption, to a degree offsetting declines in small-scale farming. On balance, though, the natural resources available to the poor in the Eastern Cape may allow subsistence living for some, but little more than that.

Financial capital. Although expressed in different ways, the decision to begin collecting and selling scrap metal was driven by the need to support families that are mired in poverty. As one woman stated, 'There was a problem at the time – the family slept hungry'. Another stated, 'No one is working at home [so] I had to look at ways of making money ...'. A third focused on the practical benefits, saying 'It brings quick cash and the money is good'.

Only five of the sixteen women had previously held a job outside of the informal economy. They recognized that collecting scrap as a livelihood practice has low barriers to entry and perhaps even is 'an easy way to make money'. However, to be able to sell the scrap in Durban, where prices are higher than what is available locally, they require cash to be able to pay the truck drivers that transport the materials to the BBCs. Fourteen of the sixteen women who completed questionnaires receive monthly Child Support Grants with amounts ranging from R330 (USD 28) for one child to R1320 (USD 112) for four children. One of the women receives a monthly old-age grant of R1400 (USD 117) and another receives a monthly pension of R5800 (USD 483) from her deceased husband's previous employer, a mine operator in Marikana. These grants and pensions provide crucial financial support that underwrites their work as informal recyclers.

Physical assets. Physical assets refer to the infrastructure, transport, shelter, and energy that are available (DFID, 1999). The assets that make metal recycling feasible are the availability of scrap, the N2 highway that runs through the area, and the trucks that transport loads. The sustainability of a livelihood based on the collection and sale of scrap metal is in question given that more women are recognizing the income opportunities from collecting scrap, thereby increasing the competition for recyclable materials. Consumers generate recyclable waste daily. Poor and rural communities, however, generate less waste than do more affluent and urban communities (World Bank, 2012). Scrap metal is not generated in large amounts in the rural areas of the Eastern Cape, so the scrap the women collect likely had accumulated over a period of years. In addition, the truck drivers can be assets but they also pose risks. If they refuse to load the scrap, the primary asset will remain idle and rendered unmarketable at the beginning point of the recycling value chain.

Social capital. Within the context of the SLF, social capital refers to the availability of various social resources upon which people can draw (DFID, 1999; Nzeadibe and Mbah, 2015). These include interpersonal relationships, as well as the social networks and groups to which individuals belong. Because of the importance of social capital in the effective functioning of communities, wellbeing is strongly affected by the levels of interpersonal and institutional trust that exists within a community.

The women were clear that they would not be able to engage in scrap collection if they could not rely on their collective resources. Although the women work for their 'own pocket', they collectively transport their scrap to Durban, and together they form a strong support group. They repeatedly stressed that they are each working for themselves although

supporting each other by lending money and sharing food; 'the only protection we have is each other'.

The women also indicated that their social assets include support from the police when they sleep at the roadside. 'We phone the police, "come, come, come"' when they feel unsafe and, 'sometimes they stand by us when we are next to the road'. The women explained that when they are at the roadside the police '...are kind and respectful'. However, when the women are in the trucks, the traffic police are less supportive. The traffic police will issue fines to drivers if they are caught allowing the women to travel in the rear of the trucks. 'They only deal with the drivers and they want money from them'. The truck drivers, according to the women, sometimes must 'bribe the police'. There are traffic police who will 'force us out of the truck as the truck has no right to pick up people on the road'. Sometimes the traffic police will say, 'You can pick up people but they cannot sit at the back with the waste'. However, there are several reasons why the women prefer to sit at the back: there is 'safety in numbers', they are able to watch over the loads to ensure goods are not stolen, and there is less risk of being compelled to perform sexual acts in exchange for transportation.

The women are also dependent on the other residents of their village and those living nearby for their livelihoods. More people are collecting scrap for sale to BBCs now that they realize an income can be earned from the activity. The women increasingly are asked to purchase scrap from residents in the area. This, in effect, adds another stage in the recycling value chain, one that precedes material collection, and it lowers the earnings from the collection and sale of recyclable metals.

One of the scrap recyclers mentioned that there is a trend in the community to move away from 'Ubuntu', an ethical humanism based in sharing and assisting one another. 'People do not help you any longer like we used to do. Now, if I go to the neighbour to ask to borrow a cup of sugar, they tell me I must go to the cash loans since the cup of sugar that she is using comes from the cash loans'. A communal ethic has thus been replaced by the spread of marketised transactions through for-profit loan providers, and these financial transactions have permeated social relations. However, community support has not been entirely replaced by market logics. Travelling to Durban requires the women to leave their families for extended periods, and children often will stay with family members or neighbours. Although they benefit from this support, however, the women also must take on additional responsibilities. Many of the recyclers look after not only their own children, but also their grandchildren, typically with little assistance from others: 'I look after my grandchildren. They get Child Support Grants but they (referring to the money) go to their mothers

who don't have a job, so they don't send the money to me'. The women indicated that they have between two and twelve dependants for whom they provide care (on average they care for six people). Therefore, although they receive community support, they also bear significant caring responsibilities.

Dimension 3: Transforming structures and processes

The area where the informal recyclers reside lies northwest of Butterworth and south of Mt Frere. Previously, the area was part of the Transkei 'homeland' for isiXhosa-speaking people that was established under apartheid policies of 'separate development'. This is a vast, underdeveloped and predominantly rural area that contains some of the highest unemployment and illiteracy rates in South Africa, as well as the lowest average incomes and secondary schooling (matric) pass rates. The provincial unemployment rate stands at 29.1 per cent (ECSECC, 2015). The N2 Highway between Cape Town and Durban passes through the area and the scrap collectors reside approximately 400 km southwest of Durban.

Dimension 4: Livelihood strategies

After the death of her husband, Sarah sold her 'pick-up bakkie' [a small truck] to a man who in turn sold it as scrap metal in Durban. At that point it occurred to her that she too could earn money from recycling. Along with several other women in the village, she 'looked in the phonebook and saw the long list of people wanting scrap. Then we took it [to Durban]'. Another participant remarked, 'we saw other people collecting and decided to start ... I wanted to help my kids get what other parents who are working get'. The women began collecting scrap and storing it outside their homes before transporting it to Durban (Photo 2).

The women explained that they try to collect sufficient scrap to go to Durban on a monthly basis. 'Sometimes we ask another [recycler] if they have enough to go and then we put [our loads] together'. The collections are taken to the highway where the women then wait for the drivers of long-haul trailer trucks to pick them up (Photo 3). 'We just go to the road and write ND (the Durban number plate) [on a sign]. Then the truck stops. [So you essentially hitchhike?] Yes, we just get a lift'.

The recyclers indicated that although they collect materials together and collaborate in getting these materials to the BBCs, they '... do not share the money and [they] do not share the scrap'. This approach is also practised by street and landfill informal recyclers (Viljoen, 2014; Schenck, Blaauw, Viljoen, 2012).

The collections of approximately four or five women are sufficient to fill an empty truck. However, trucking companies prefer that vehicles carry loads of sanctioned goods in both directions. Because of this, the women,



Photo 2 Scrap stored at the collector's house
Source: Asandile (Fieldworker).



Photo 3 Scrap piled up next to the N2
Source: Asandile (fieldworker).

with their unsanctioned loads, sometimes have to wait for days or longer for a willing driver – with an empty truck – to haul the scrap metal they have collected. The women are aware that, according to company policies, ‘truck drivers should not pick us up’ yet they still do so as a way to earn additional income.

The women stated that, once it is sold to a BBC in Durban, a typical recycler's load will be worth between R1000 (USD 83) and R3000 (USD 250) (The Rand/USD rate used was the average from 2 January to 23 June 2015, obtained from the [South African Reserve Bank \(2016\)](#)), depending on the product mix and the prevailing commodity prices. One of the women shared her receipts from the BBC for the first half of 2015, proving an accounting of the weight collected, product mix and income earned (Table 1).

The four trips to Durban yielded a gross income of R8232.50 (USD 686), an average of just over R2058 (USD 172) per trip or R1646 (USD 137) per month for the nearly five months between 7 February and 23 June 2015 (Comparable income data for other types of informal recyclers in the Eastern Cape is unfortunately limited). Viljoen (2014) found that in 2012 the mean and median daily income that street recyclers earned in East London was R44.58 and R30, respectively, while in Port Elizabeth it was R43.22 and R35). The receipt shows that there was a slight increase in the price of steel on the third trip, though prices dipped again in June. The price for other recyclables, such as aluminium cans and copper wire, remained stable.

Table 1 Receipt for scrap metal indicating weight, product mix and payment: February to June 2015

Date	Weight in kg	Description of metal	Price (R/kg)	Total rand
07-Feb-2015	185	Steel	2.2	407
	98	Steel	2	196
	489	Subgrade	1.6	782
	14	Ali cast iron	8	112
	17	Ali cans	1	17
	67.5	Cans	0.8	54
Total	870.5			1568
13-Mar-2015	208	Steel	2.4	499
	34	Steel	2.2	75
	376	Subgrade	2	752
	6	Copper wire	50	300
	17.5	Ali cast iron	10	175
	0.5	Brass fitting	25	12.5
Total	642			1813.5
04-May-2015	149	Steel	2.7	402
	190	Steel	2.5	475
	298	Subgrade	2.4	715
	20.5	Ali cans	2	41
	127	Cans	1	127
	30.5	Ali cast iron	10	305
Total	815			2065
23-Jun-2015	129	Steel	2.4	310
	185	Steel	2.3	425
	264	Subgrade	1.9	501
	11	Copper wire	50	550
	19.5	Brass fitting	25	487
	30	Ali cast iron	10	300
	12	Battery	5	60
	5	S/Steel	8	40
	7	Ali cans	2	14
	99	Cans	1	99
Total	761.5			2786

Source: Original receipts from BBC in Durban.

After accounting for the approximately R600 (USD 50) per trip that must be paid to the truck drivers and taxis for transport, the net monthly income from scrap collecting is closer to R1160.50 (USD 97). Also noteworthy is the contribution that copper wire makes to the income earned. The two occasions where copper was collected yielded an additional R850 (USD 71). Without this, the gross income for the five months would have been just R7 382.50 (USD 615).

Table 1 suggests that the time between trips may be getting longer. The number of observations is of course limited to only four. However, after the second trip, trips three and four took an additional one and two weeks, respectively. The time between the first and second trip was 35 days and between the third and fourth trip it was 50 days. Although a number of factors may play a role here, it is plausible that it is taking longer each time to gather enough recyclable material to make the trip worthwhile. This was alluded to by the women who said that the village is 'clean' and therefore it takes longer to find recyclable metals than it had in the past, raising questions about the long-run viability of this informal economic activity.

Furthermore, the informally arranged transport provided by the trucks presents its own sets of challenges. Truck drivers only haul the scrap if the women are each able to pay, in advance, between R300 and R400 (USD 25-33). With personal cash reserves in extremely short supply, possessing such sums regularly presents challenges for the recyclers. Some are able to borrow money from family members or neighbours. Others take out loans from micro-finance or instant-cash money lenders (colloquially known as 'loan sharks'). In some instances, they hold onto their recyclable materials until the recipients of government grants receive their payments, which are then borrowed against to pay the truck drivers. The Child Support Grants, for example, totalled R330 (USD 28) per child at the time of the research, meaning that one grant will pay for the transportation of the scrap. After selling the scrap in Durban, the women will pay a taxi up to R200 (USD 17) per person to return home. 'When you come you must pay back the R400 (USD 33) that you borrowed ... and you had to pay the R200 (USD 17) [for the taxi], so you have only R400 (USD 33) left of the R1000 (USD 83)'. These trips are made between four and nine times each year, depending on the amount of scrap collected.

However, relying on informally arranged transport is no sure thing, and just waiting for the trucks carries with it dangers. '[S]ometimes you have to wait two weeks for a lift. We only go on closed trucks. Sometimes we get wet in the rain. You cannot leave your scrap or somebody will steal it. Sometimes people get robbed or raped'. As protection and as a way to safeguard the scrap metal, a married woman's husband will sleep outside with her. Those without husbands will sleep as a group, leaving their

children, if they have any, with neighbours or family members. Some indicated that their children and other relatives bring them food while they wait at the roadside.

When arriving into Durban during the evening or late at night, the women must wait until the next morning for the BBC to open. 'Everybody takes their scrap to different places'. Some sell to BBC X because it 'has a place to sleep and showers and they give tea and bread in the morning. His people also help to offload [the scrap] and provide transport to the taxis'. The owner of BBC X has instructed his security guards to look after the women when they sleep in front of the BBC, but the women added they do not always trust him and, therefore, at times they will also sell their scrap to BBC Y. 'He is a crook. His scale is crooked and he pays less than other places. I like Y. Their scale is better'. [Viljoen, Schenck, Blaauw \(2012\)](#) and [Choudhary \(2005\)](#) have found that BBCs pay different prices due their differential cost structures and that some deliver additional services to the informal recyclers as a way to ensure a steady supply of scrap. Some of the BBCs revealed that they try to keep the prices they pay to the scrap collectors as stable as possible, given how difficult it is to explain fluctuations in global commodity prices and their impacts on what the informal recyclers are paid for their collections. In doing so, they hope to maintain the trust of the recyclers ([Viljoen, Schenck, Blaauw, 2012](#)).

The women refer to the BBCs in Durban as 'Marikanas', a reference to a town in the North West Province known for large mining operations and the site where, in 2012, 34 striking miners were killed during a confrontation with police. The reason the BBCs are called 'Marikanas' is that they symbolize the struggles of family members who worked as migrant workers on the mines. Some family members have worked at Marikana '... and some died in the Marikana massacre'. As the women explained, those family members sent money home while risking their lives working in the mines. Likewise, the recyclers are now risking their lives by boarding trucks under uncertain circumstances in order to sell scrap in Durban.

This point was further explored when the women were asked why they do not sell the scrap to BBCs closer to home or in nearby cities, such as East London. 'They buy at too little an amount. In Durban they pay more. But [the BBCs in Durban] also have many tricks. Sometimes they say the price depends on the [exchange value of the] rand. But at least they pay. In April through August they paid R1-40/kg, now they give R2/kg. Subgrade they only give R1-20'. These fluctuations, though endemic to recycling ([Dias and Samson, 2016](#)), are unpredictable and they directly affect the earnings of informal recyclers. Should the price per kilogram of scrap fall, either because of plummeting commodity prices or because of a change in currency valuations, the viability of scrap-metal recycling could

become compromised and the women would lose their ability to generate an adequate income from their collections.

Discussion and conclusion

Recycling can be regarded as a 'perfect' example of sustainable development (Medina, 2008; Nzeadibe and Mbah, 2015; Schenck, Blaauw, Viljoen, 2016), provided that it is supported by public policies and social institutions so that it remains 'socially desirable, economically viable and environmentally sound' (Nzeadibe and Mbah, 2015, p. 8; George, 2015). Nzeadibe and Mbah (2015) argue that waste recycling has the potential to create jobs, reduce poverty, save municipalities money, supply inexpensive materials to industry, conserve natural resources, and assist in cleaning the environment. Farber (2016) estimates that informal waste pickers in South Africa save municipalities more than R750 million per year. Moreover, informal recycling has been shown to prevent the starvation of millions of people worldwide (Medina, 2008; Nzeadibe and Mbah, 2015). From this study it is evident that the livelihood strategy of the N2 scrap collectors is beneficial to themselves as well as the broader community. However, it must also be recognized that in the long run there might not be sufficient scrap metal to ensure the continuation of this livelihood practice.

Lindell (2010) notes that although there is considerable research devoted to better understanding the ways in which people make a living in the informal economy, the collective agency of these workers has been overlooked. She further argues that although informal workers make significant contributions to national economies, they rarely have a voice in decision-making. Collective organizing is one mechanism through which these workers can achieve recognition by the state and civil society actors. The scope for organizing and collective action by informal recyclers is an important part of the future research agenda for scholarship on the informal economy (for earlier research on waste recycler organizing see Samson, 2009a).

In this study, the SLF was used to assess the working lives of scrap-metal collectors, and to explore the viability of scrap-metal collection as a livelihood practice. The SLF also helped to bring the voices and decisions of the people involved into the analysis (George, 2015; Brocklesby and Fisher, 2003; Chambers and Conway, 1991). In this study, we conveyed the sense of dignity held by the women; they take great pride in their self-employment, their ability to provide for their children and grandchildren and their activities that improve the physical environment of the community. In addition, they recognize the importance of the collective support they provide one another.

Scrap collectors in the Eastern Cape are among the millions of people earning a living from recycling. This livelihood practice could be enhanced through the following actions:

- (1) The facilitation of a participatory sustainable livelihood analysis (SLA) through which the collection of recyclable materials is assessed to determine how this livelihood practice can be adapted and enhanced to ensure its sustainability. A cost-benefit analysis could help determine whether (i) selling the scrap to the closest BBC is more cost effective than transporting the materials to Durban and (ii) whether collecting other recyclable materials, such as plastic, could significantly increase incomes and stabilize earnings. Ways to reduce risks associated with their current *modus operandi* also could be explored, such as strategies for mitigating the risk of truck drivers being unable to transport collections to Durban or developing alternatives in case scrap is no longer readily available. Furthermore, an SLA can be a means to enable the women to systematically reflect on their experiences collecting scrap metal so that they might build new capabilities and capacities. For example, they might shift their energies towards collecting materials (such as plastic) when metal prices drop.
- (2) The facilitation of an SLA with the broader community to determine current and potential assets, capabilities and livelihoods that may exist or could be developed within the community. This could help create broader, more sustainable safety nets for the women and the community at large. The aim would be to identify other income-generating activities to replace scrap-metal recycling should it cease to be viable. The SLA could also identify the existence of government departments and civic organizations that could support the women's livelihoods and assist with whatever efforts they may pursue to form collective organizations through which their voices can be amplified in policy debates.

Effective community development practices are both people-centred and holistic (Botes and van Rensburg, 2000). Being people-centred requires that plans be developed based on the knowledge and capacities of the impacted populations. Being holistic requires consideration of the likely effects, intended and unintended, that decisions will have on a community. A well-designed SLA can be used to achieve these objectives. Furthermore, planning and development decisions often have systemic impacts. This is why the expertise of the community – which can be nurtured and systematized through the implementation of critical, reflective planning processes – is so crucial (Carrillo, 2010).

In order to improve the wellbeing of residents of economically disadvantaged areas such as those found in the Eastern Cape, the activities of informal recyclers will need to be better incorporated into local development plans and initiatives. Participatory planning through an SLA can be an important first step in their greater incorporation into these decision-making processes.

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