

How much do South African households in towns & rural areas recycle?

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ABSTRACT

In 2015 the CSIR conducted the second national survey on household waste recycling behaviour in South Africa. Focussing on the self-reported recycling quantities of the 1500 targeted households in **towns & rural areas**, the results show that 13.7% of households recycle some plastics, 12.3% some glass, 10.0% some paper, 9.4% some metals and 6.4% some of their WEEE. Four percent (4.3%) of households indicated that they recycle more than half of their plastics, and 2.4%, 3.1%, 2.4% and 2.9% recycle more than half of their glass, paper, metal and WEEE, respectively. Per province, the self-reported quantities recycled differ considerably, e.g. 20.4% of households in EC towns & rural areas recycle some metals and 19.5% in MP, compared to FS, NC and NW with 3.7%, 3.3% and 1.8%, respectively. More research is needed to understand these recycling patterns in towns & rural areas, as well as the barriers that prevent households from recycling all their recyclables.

INTRODUCTION

Shortages in available landfill airspace, is prompting municipalities to actively seek alternative solutions to landfilling. National policy promotes the waste management hierarchy and the concept of waste as a resource, e.g. NEM:WA (RSA 2008) and the National Domestic Waste Collection Standards (RSA 2011). The National Waste Management Strategy (NWMS) (DEA 2011) has set short-term (5 year) targets of diverting 25% of recyclables from landfill sites for re-use, recycling or recovery by 2016, and all metropolitan municipalities, secondary cities and large towns have initiated separation at source programmes (Goal 1), and 80% of municipalities running local awareness campaigns (Goal 4).

Municipal campaigns designed and implemented in partnership with local stakeholders, including labour, industry, civil society and NGOs, form the foundation of the strategy to create awareness about waste. Lacking a national waste and recycling communications and awareness programme, several material organisations increasingly invest in awareness and communication initiatives in an effort to raise consumer awareness of the benefits of recycling. However, these private sector initiatives remain largely disconnected.

The research conducted by the CSIR in 2010 (Strydom 2012) did not include households in towns & rural areas. To date, a baseline for household recycling in towns & rural areas is thus lacking. In large urban areas, households regularly recycling more than half of their paper and packaging waste almost doubled over the past 5 years, but households in towns and rural areas are lagging behind (Strydom and Godfrey 2016).

This poster presents findings of the 2nd National Household Waste Recycling Behaviour Survey (2015) for South Africa and shows households' self-reported recycling quantities in towns & rural areas for five waste streams across all of South Africa's nine provinces, namely, Eastern Cape (EC n=181); Free State (FS n=106); Gauteng (GP n=76); Kwa-Zulu Natal (KZN n=301); Limpopo (LP n= 249); Mpumalanga (MP n=147); North West (NW n=158); Northern Cape (NC n=85); and Western Cape (WC n=112), in alphabetical order.

METHODS

Research design: A descriptive quantitative research approach was followed (Creswell, 2003; Leedy and Ormrod, 2005), with a fixed-form survey with a selection of options to gather data within a short period of time (Babbie and Mouton, 2001).

Sampling: Targeting a representative sample of 3 500 households in South Africa (2 000 in large urban areas, i.e. cities with a population size \geq 250 000 and 1 500 in towns & rural areas, i.e. population size $<$ 250 000), a random probability sampling method was followed. To prevent interviewer bias, each household's representative was selected by listing all persons 15 years and older on the Kish grid from which one respondent was then selected (Kish, 1949).

Questionnaire: In the 2015 survey, a selection of four sets of questions was used, the results of one question is reported here, namely:

Question – measure self-reported recycling quantities (qualitative measure of "how much")

Question: Choose the statement that best describes how much your household recycles each of the listed recyclable materials – paper, glass, metal, plastic, WEEE

Options: My household recycles...

1. Nothing; 2. Very little; 3. Some things; 4. About half; 5. Most; 6. Almost all; 7. Everything ...of what can be recycled.

Data collection: The CSIR contracted a professional survey company to conduct face-to-face interviews as part of their biannual national survey. The interviews were conducted in the homes of, and in the home language of, the respondents. The final sample consisted of 3617 interviews, representing 2045 households in large urban areas and 1572 households in other towns and rural areas, from all nine provinces, including deep rural areas. The sample is representative of the South African population: all age groups and races, and equally represented by males and females. All ethical requirements were adhered to. Anonymity of the respondents is guaranteed and the identity of the individual respondents cannot be linked back to the data or to their area of residence.

Analysis: The quantities of recyclables each household recycles is derived from a **qualitative measurement** which is based on the perceptions of respondents on how much their individual households recycle of each recyclable material (e.g. "very little" or "almost all").

RESULTS

The percentage of households in towns & rural areas that recycle specific quantities ("how much") of each of the five recyclable materials is shown in **Figure 1**. For individual waste streams, the highest percentage of households recycling some (not "nothing", i.e. any quantity from "very little" to "everything") is obtained for plastic (13.7%), followed by glass (12.3%) and paper (10.0%). Nine percent (9.4%) of households in large urban areas recycle metal and 6.4% WEEE (percentages not shown on graph; sum of percentages of not "nothing").

When considering only those households recycling more than half of their recyclables ("Top 3" i.e. households recycling "everything", "almost all" and "everything"), 4.3% recycle plastics, followed by paper (3.1%), glass (2.4%), WEEE (2.9%) and metal (2.4%). Although less households recycle some paper (not "nothing") (10.0%) than those that recycle glass (12.3%), more households recycle substantial volumes ("Top 3", more than half) of their paper (3.1%) than those that recycle glass (2.4%).

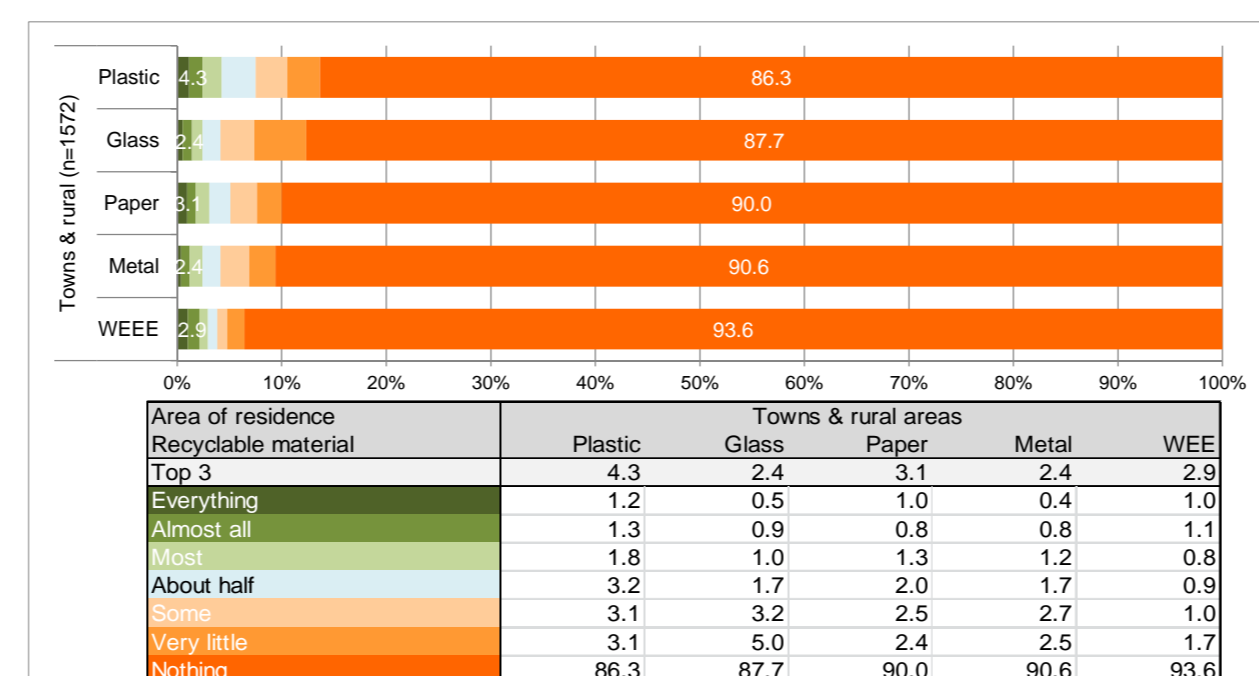


Figure 1: Percentage of households recycling various quantities of recyclable materials in towns & rural areas in 2015. The figures on the top left of the graph depict recycling of the "Top 3" quantities, i.e. more than half ("most", "almost all" and "everything").

Figures 2–6 show considerable variation in quantities of materials recycled by households in towns & rural areas in the respective provinces. While 26.0% of households in GP recycle some of their plastic, 13.5% recycle more than half (**Figure 2**). Thus, more than 50% of the recycling households in GP have the means to recycle more than half of their plastics. In MP 24.7% and in EC 21.2% of households recycle some plastic, but the percentages of recycling households that recycle more than half of their plastic is much lower, i.e. 5.2% and 6.6% in MP and EC, respectively. The data suggests that, compared to GP, households in MP and EC experience barriers to recycle their plastics, and in the other provinces even more so. Nevertheless, 74.0% of GP households do not recycle plastic.

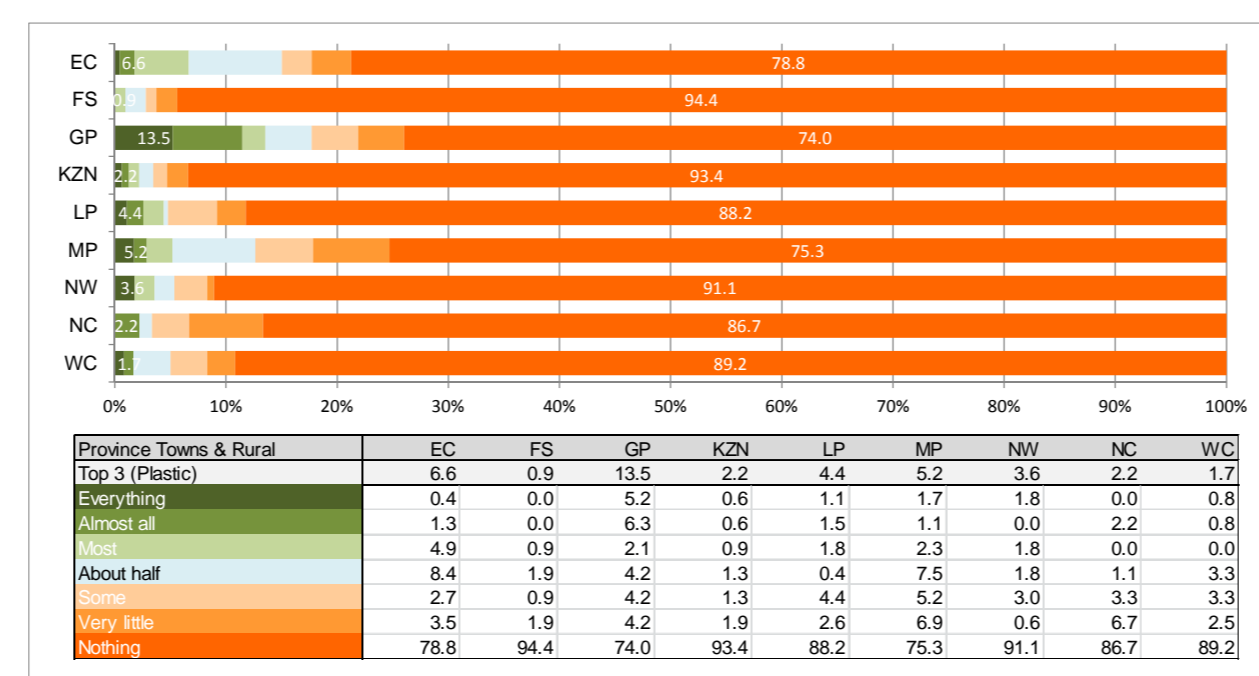


Figure 2: Percentage of households recycling plastic in towns & rural areas, per province.

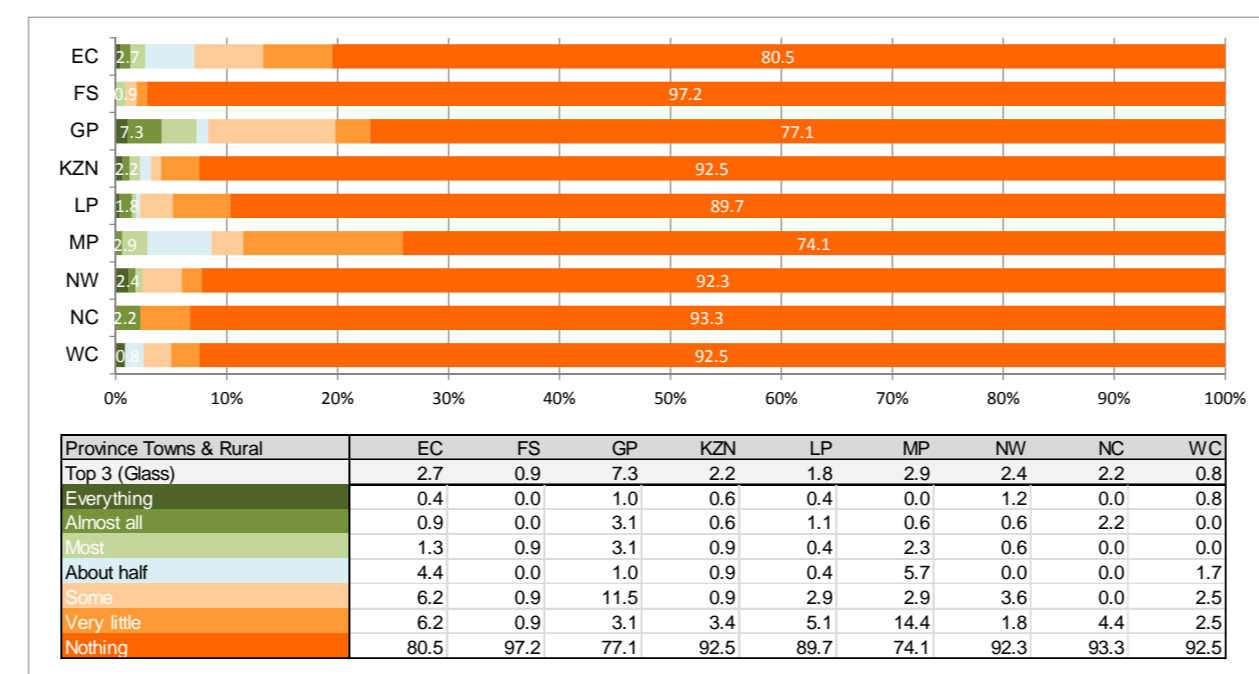


Figure 3: Percentage of households recycling glass towns & rural areas, per province.

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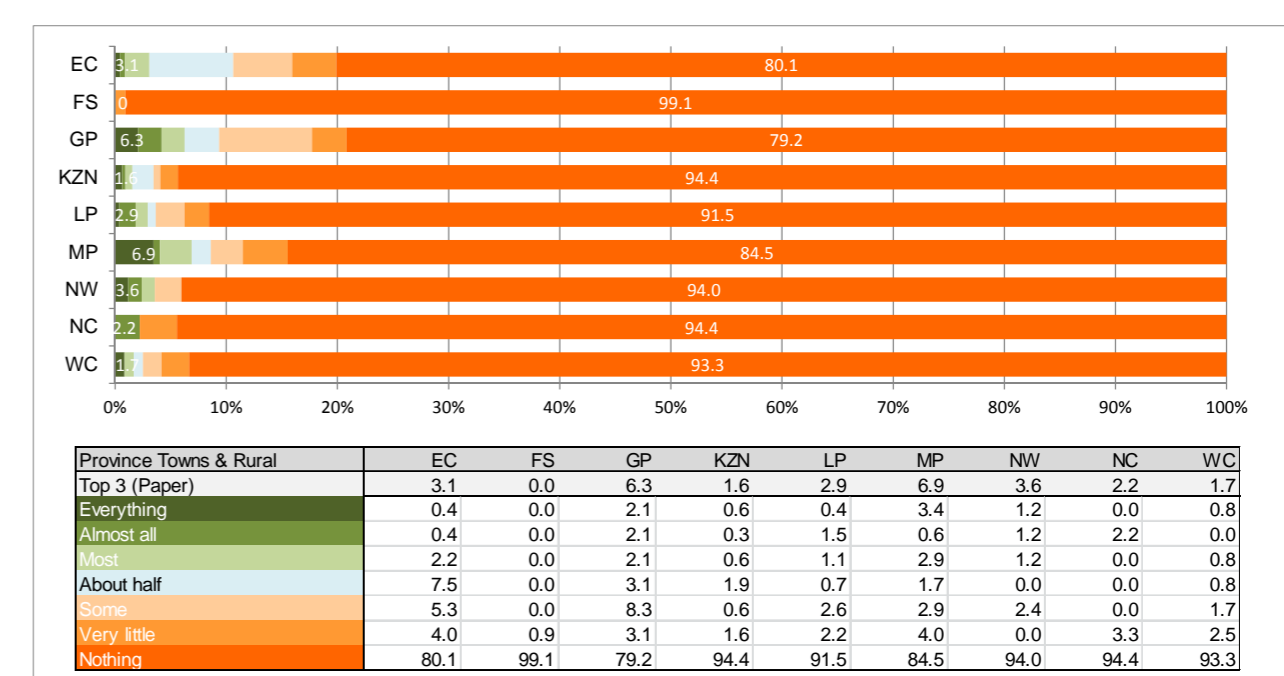


Figure 4: Percentage of households recycling paper in towns & rural areas, per province.

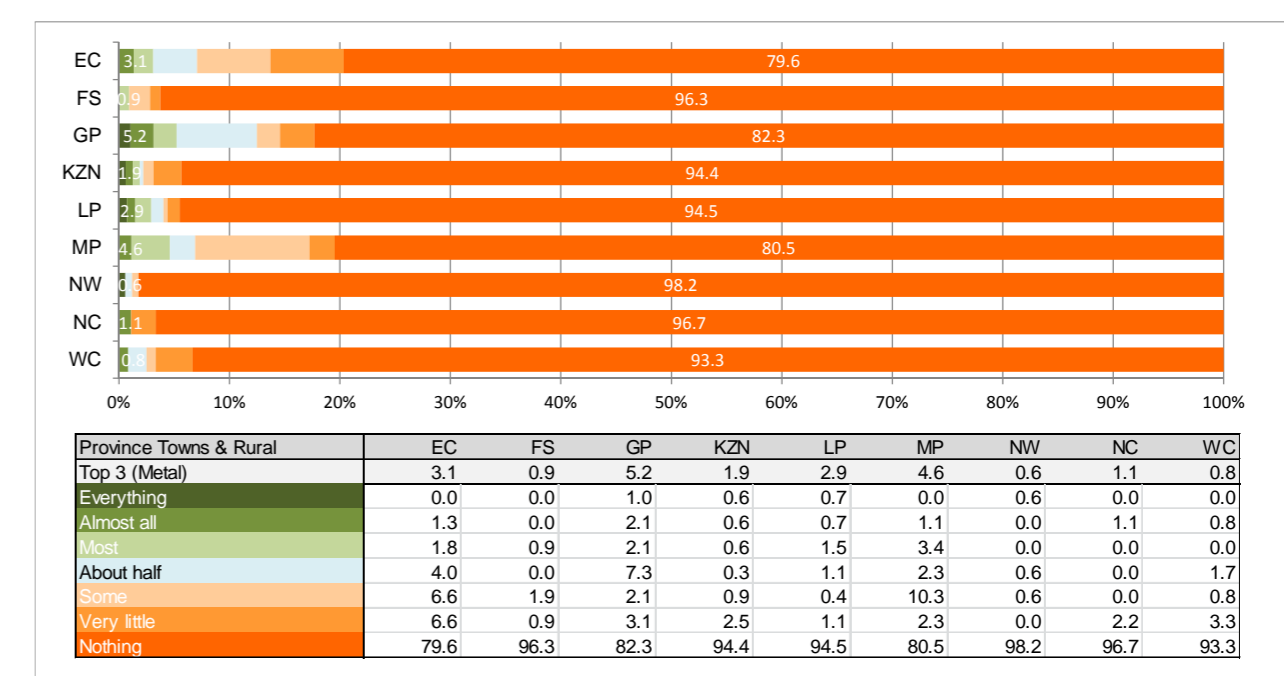


Figure 5: Percentage of households recycling metal in towns & rural areas, per province.

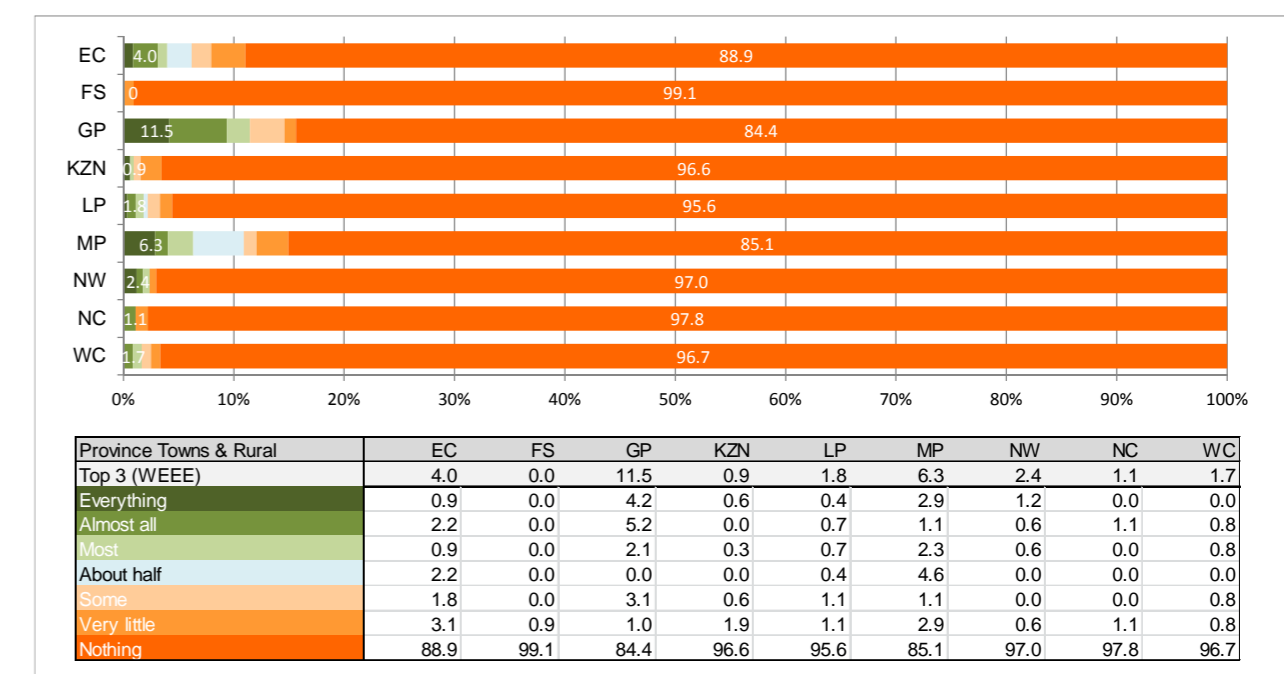


Figure 6: Percentage of households recycling WEEE in towns & rural areas, per province.

For all five of the recyclable materials, the data suggest that a higher percentage of households in towns & rural areas recycle in GP, EC and MP than in the other provinces. The effect that the relatively short distances in Gauteng has on the availability of infrastructure and more cost effective services, and the resultant effect on household recycling should not be underestimated.

CONCLUSION

Results from self-reported recycling behaviour surveys are considered to be over-optimistic. Nevertheless, it provides valuable insight into recycling tendencies worldwide (Eagly and Chaiken 1993; Armitage and Connor 2001) and "have implications for recycling policy and practice" (WRAP 2015).

Self-reported recycling quantities in towns & rural areas show that households appear to recycle more of some of the waste streams than of others, and this preference for some recyclable materials might be region specific. The differences in self-reported recycling quantities for each of the five waste streams across provinces, suggest that barriers to recycling are not uniform across all provinces.

There is a need to understand the nature of, and role of, the specific drivers of recycling behaviour in South Africa's towns and rural areas, which either enable or prevent households to recycle. Thus, more research is needed to fully understand the household recycling patterns, and drivers thereof, in towns & rural areas. The author welcomes suggestions and comments from stakeholders, buy-back centres, recycling companies and other role players operating in towns and rural areas.