Recycling in SA – Current trends and future realities

by Suzan Oelofse, Senior Researcher and Research Group Leader for Waste and Society at the CSIR, Pretoria, South Africa

In the absence of legal requirements, the CSIR undertook a study to determine the triggers for recycling in South Africa. The National Environmental Management: Waste Act, 2008 came into effect on 1 July 2009 and is the first South African law that drives recycling. However, recycling is not new to South Africa. The recycling statistics for South Africa paint a positive picture for recycling, yet little is documented about the actual driving forces behind these positive recycling figures.

Many South Africans still have memories of the retail refund associated with the glass bottle deposit system. In 1973 the paper recovery rate was estimated at 23%[1], implying incentives as a possible driver. Over the past few years waste recycling statistics suggest an average growth rate of 23,7% per annum in the percentage of recyclables recovered and reprocessed. Identifying these drivers is important to ensure that new initiatives towards improving recycling rates, do not negatively impact on the achievements of the past.

Current trends in recycling

Statistical data obtained from the Packaging Council of South Africa indicate an increase in the recycling of paper (22,9%), metals (42,5%), plastic (14,5%) and glass (14,9%) in South Africa over the past 20 years (Figure 1). Comparable data for the period 2002 to 2010 were not readily available. Waste stream specific data indicate that there has been a significant increase in the recovery rate of used beverage cans between 1994 and 1998, followed by a more gradual but steady increase (Figure 2).

A slow but steady increase in the recovery rate of recoverable paper has been reported by the Paper Recycling Association of South Africa (Figure 3). Of the 38% paper recycled in 2000, 24% was post-consumer paper comprising 20% from wholesalers and retailers, 2% from households and 2% from offices. At the time, it was estimated that the potential for additional recycling from wholesalers and retailers was 19% (362 tpa), from domestic sources 17% (317 tpa) and 10% (194 tpa) from offices[2].

In developed countries, resource recovery is largely driven by law and undertaken by the formal sector. Comparing the development of legislation, as illustrated in Figure 4 on page 6, with recycling trends in South Africa, the same does not apply[3].

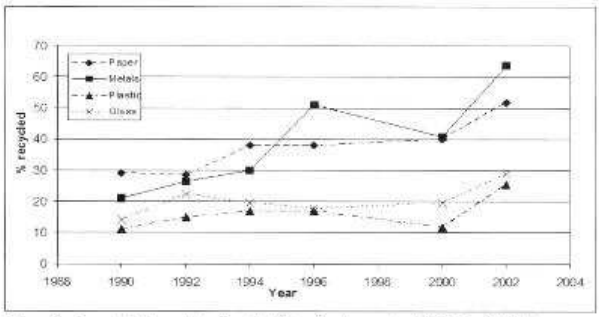

Figure 1: Recycling trends in South Africa for the period 1990 to 2002 (source: PACSA)

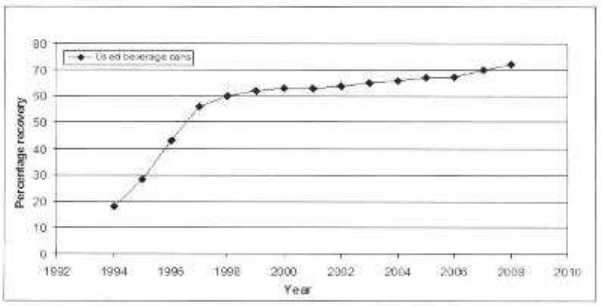

Figure 2: Used beverage can recovery rate 1994-2008 (source: Collect-a-Can)

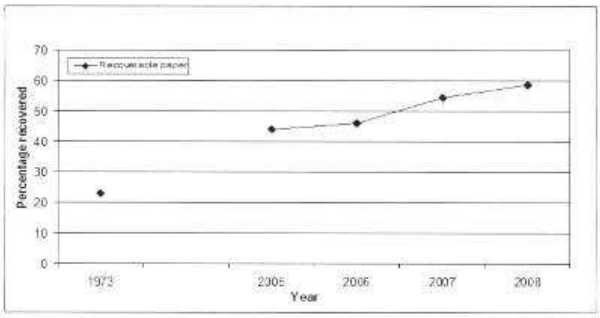

Figure 3: Paper recovery rate as percentage of recoverable paper 2005-2008 (source: Paper Recycling Association of South Africa)

How was this recycling trend achieved?

The recycling sector in South Africa comprises a well established formal recycling sector, as well as a large, active, informal recycling sector. The bulk of the recyclables recovered is from industrial and commercial pre-consumer origin. This waste stream is collected by the formal recycling sector, and is easy to recover, of high quality and generally of relatively high value. The focus of the informal recycling sector on the other hand, is mainly on post-consumer recovery of recyclable materials from residential and commercial waste. These wastes are generally of low quality and not easily recovered.

Post-consumer recycling to date was achieved mainly through ad hoc initiatives funded largely by the private sector in partnership with communities. The informal sector recovery of post-consumer recyclables in South Africa started at dumpsites and landfills where pickers sorted through mixed waste after it had been dumped for final disposal. More recently these activities have spread to the kerbside in urban areas where pickers now sort through waste bins before collection by the municipal services. Due to contamination, the recyclables recovered this way are generally of poor quality with relatively low value. Informal recyclers contributing significantly to post-consumer recycling rates are common in developing countries. The increase in recyclables recovered by the informal sector have "flooded the recycling market" [5] and resulted in a drop in market prices on recyclables.

Some charity organizations, schools and community organizations are also engaged in the collection of recyclables. These activities rely heavily on the goodwill of communities to separate the waste at the household and to drop it off at the provided drop-off facilities.

If legislation is not the trigger, what is?

The potential to save energy and water as well as competition in the market and environmental responsibility, are reported to act as triggers for recycling. Therefore financial incentives seem to be the main driver for recycling in industry. Fibre shortages and the limited potential for expansion of commercial forests also contributed to recycling in the paper industry. The underlying threat of regulatory action throughout the last decade – government imposing recycling targets on industry – was identified as a common driver to all sectors (paper, glass, plastic and metal). Over time, some industries also developed markets for recyclate as a competitive response to other more expensive raw materials.

Recycling initiatives supported by schools, charity and community organizations are largely driven by the potential to generate income, while the informal recycling sector developed in response to poverty and unemployment. Waste pickers collect certain waste material for subsistence (food, clothing and shelter), or to exchange or sell. Recovery of recyclables requires low-skill and comes with on-the-job training in identifying wastes with a potential value. There is high volatility in the markets for recyclables, therefore the waste stream with the highest value is the waste stream favoured by the informal sector. This situation results in huge variability in daily recycling rates of specific waste streams.

Recycling initiatives are increasingly being tested and introduced in formal urban areas with varying degrees of

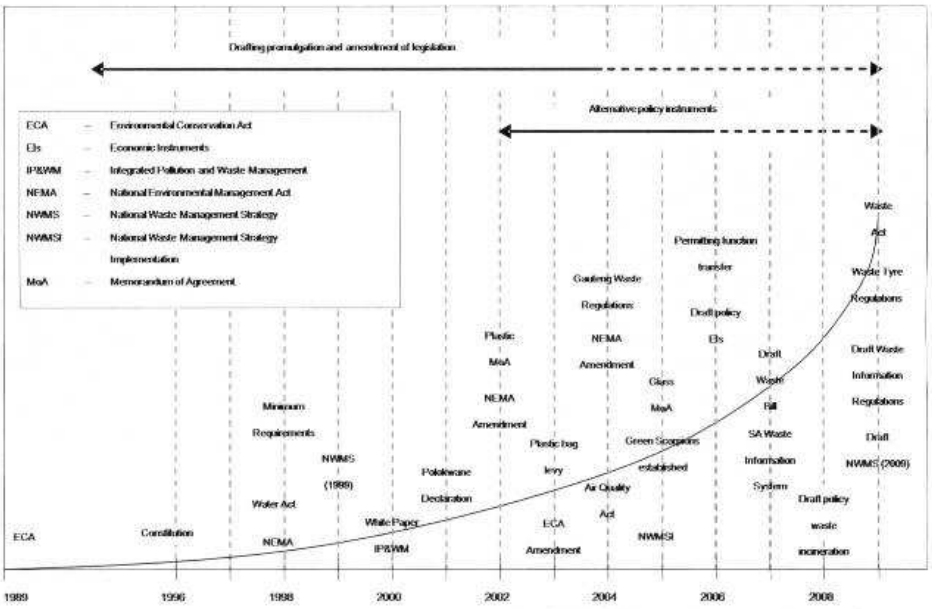

Figure 4: History of pollution and waste policy interventions in South Africa (1989-2009) (after Godfrey and Nahman)[4]

success. These initiatives strongly rely on the positive attitudes and behaviour of community members at household level. International research in developed countries suggests that environmental awareness and convenience factors could influence recycling behaviour. In this regard, the CSIR is currently investigating the drivers for recycling behaviour and attitudes at household level in South Africa.

Future realities

The objectives of the National Environmental Management: Waste Act, 2008 include amongst others: minimizing the consumption of natural resources; avoiding and minimizing the generation of waste; reducing, re-using, recycling and recovering waste. To achieve these objectives of the Act, a stronger emphasis on recycling of post-consumer waste and waste minimization can be expected.

Targets for recycling are likely to be set and source separation of household waste will increasingly be introduced. The draft National Waste Management Strategy targets metropolitan municipalities and secondary cities for the introduction of source separation of household waste. This will, over time, be rolled out to all municipalities.

New recycling initiatives could therefore be expected to replace the existing initiatives of the well established, successful informal recycling sector. Picking at landfills will be phased out, and replaced by formal waste separation at source initiatives. Since recycling has been identified as a priority area for job creation in South Africa, opportunities for formalizing the informal sector should be investigated. Finding the balance to meet job creation and recycling targets could be rather daunting to municipalities that are facing large service backlogs.

The Waste Act, 2008 also introduced the concept of extended producer responsibility, which places an obligation on producers to ensure that, amongst others, recycling is encouraged. The Minister may, through a consultative process, identify the class of products to which the extended producer responsibility will apply and specify the associated measures to be taken. This may entail required changes to the composition of certain consumer goods to meet recyclable content or durability specifications.

References

1 *Brooks, GR de V (1977). Disposal and recovery of waste paper in South Africa. South African National Scientific Programmes Report No 13. April 1977.*
2 *Department of Environmental Affairs and Tourism (DEAT), (2000). Starter Document for Waste Recycling: Background Document of Post Consumer Recycling in South Africa and Internationally, Final Draft, May 2000.*
3 *Oelofse, SHH and Strydom, WF (2010). The Trigger to recycling in a developing country – in the absence of Command and Control Instruments. Proceedings Waste 2010, Stratford-upon-Avon, Warwickshire, England, 28-29 September 2010.*
4 *Godfrey, L and Nahman, A (2008). Are economic instruments the solution to sustainable waste recycling in South Africa? In: Proceedings of the WasteCon 2008 Biennial International Waste Congress and Exhibition, Durban, South Africa, 6-10 October 2008.*
5 *Fiehn, H and Ball, J (2005). Background research paper: Waste. South Africa Environment Outlook. National State of the Environment Project. Department of Environmental Affairs and Tourism: Pretoria.*