

**DEPARTMENT OF ENVIRONMENTAL  
AFFAIRS AND TOURISM**

**PROGRAMME FOR THE IMPLEMENTATION OF THE  
NATIONAL WASTE MANAGEMENT STRATEGY**

**Starter Document for Waste Recycling**

**A Framework for Sustainable Post Consumer Recycling  
in South Africa**

**Final Draft**

**May 2000**

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# TABLE OF CONTENTS

<b>TABLE OF CONTENTS</b> .....	<b>I</b>
<b>1. INTRODUCTION</b> .....	<b>1</b>
<b>2. INTERNATIONAL EXPERIENCE</b> .....	<b>1</b>
<b>3. SOUTH AFRICAN STATUS QUO</b> .....	<b>2</b>
<b>4. PRINCIPLES AND OBJECTIVES FOR RECYCLING</b> .....	<b>4</b>
<b>5. PROMOTION OF RECYCLING IN SOUTH AFRICA</b> .....	<b>5</b>
5.1 PRIORITY WASTE STREAMS .....	5
5.2 IMPLEMENTATION OF POLICY INSTRUMENTS .....	5
5.2.1 <i>Regulatory Approaches</i> .....	5
5.2.2 <i>Market-based Instruments</i> .....	8
5.2.3 <i>Information/Education Initiatives</i> .....	8
5.2.4 <i>Recommendations for Further Investigation</i> .....	9
<b>6. THE WAY FORWARD</b> .....	<b>10</b>

## 1. INTRODUCTION

This document provides a structured outline of the approach to be used for implementing sustainable post-consumer waste recycling in South Africa. The aim of the framework is to provide broad guidelines for all stakeholders who form part of the recycling chain on mechanisms to be adopted to promote effective recycling practices. Stakeholders include government at all levels, product and packaging manufacturers, recyclers, collectors or recyclable material and the public at large.

The intention of the framework is to present a realistic and practical approach to take South Africa forward from the current recycling situation. It is recognised that one initiative or approach will not necessarily meet all the identified needs. It is appreciated that there will be geographical, demographic and socio-economic differences that will have to be addressed by the approach adopted.

Significant progress has been made to date with recycling activities driven mainly by economic forces and implemented primarily by the private sector. However, new developments within South Africa necessitate a re-appraisal of recycling. These include - The Constitution, the Environmental Management Policy, National Environmental Management Act, the Integrated Pollution and Waste Policy and the National Waste Management Strategy.

Integrated waste management requires the implementation of a hierarchical approach to waste management, i.e. a sequential application of waste prevention/minimisation, recycling and re-use, treatment, and ultimately disposal. Hence, recycling is an integral activity in the way waste management will be implemented in the future.

The document sets out: the lessons learnt both internationally and nationally, the benefits of recycling, priority waste streams, potential policy instruments and a proposed way forward. This document should be read in conjunction with the companion volume '*Background Document of Post Consumer Recycling in South Africa and Internationally*' and the *Draft Legal Framework Document for Recycling*.

## 2. INTERNATIONAL EXPERIENCE

An evaluation of the international initiatives indicates that recycling initiatives are either formalised recycling programmes, as found in the EU and the USA, or less structured recycling initiatives as evidenced in India, Kenya and Botswana (*Background Document, Section 3.12 and Appendix A*). Formalised structured recycling programmes include: formal statutory provision for recycling, setting recycling targets, and implementing economic and co-regulatory instruments, public education and information awareness programmes, and product-based policies.

Formalised government intervention has generally resulted in increased levels of recycling for paper, glass and plastics. Assessing the environmental and economic costs and benefits of recycling is complex and no definitive statement can be made about these. It is recommended that life cycle analysis and cost benefit analysis be

undertaken to establish the true benefits of recycling in the context of South African conditions. Some driving forces and perceived benefits which hold for the EU and the USA may not necessarily be applicable to South Africa. For example, landfill availability and costs are extremely high in some developed countries and options such as incineration with energy recovery are not appropriate to South Africa.

A recent EU study has highlighted the following aspects as important for making recycling industries more competitive (*Background Document, Box 3.1*):

- Standardisation with respect to product design, material testing and labelling.
- Development of markets and their transparency.
- Innovative technologies.
- Regulatory measures.
- Establishment of a EU Recycling Forum.

### **3. SOUTH AFRICAN STATUS QUO**

At present the recycling of waste is not generally viewed as an essential part of waste management in South Africa. Consequently no standard mechanism exists for implementing and funding recycling. The majority of initiatives have been developed on an *ad hoc* basis and have been funded by the private sector, with minor financial inputs from the authorities (*Background Document, Section 2*). Some schools are involved in the collection of recycled material, especially paper, cans and returnable bottles, partly as part of the education in environmental issues, and partly to earn money for the school budgets.

Recycling centres and garden waste-drop-off centres are established in some of the larger cities, in which waste is separated into e.g. glass, paper/cardboard, cans, scrap metal, plastics, garden waste and other waste, as delivered in separate form by members of the public. Separation of this waste may be poor, thus hampering cost-effective recycling. Collection banks are used on a small scale for glass and paper.

A number of capital-intensive recycling plants have been unsuccessful in South Africa, e.g. the Robinson's Deep Waste Flow Plant in Johannesburg, and the Resource Recycling Plant in Randburg. A labour intensive initiative in Durban, Tempo Recycling, also failed. Although the plants worked from a mechanical point of view, their failure has been attributed to an overestimation of the value of recoverable materials, unrealistic requirements of the municipalities involved, the economy experienced a down turn at the time that the projects were launched, informal pickers had removed recyclable materials from the waste stream at source, and decreases in price of recycled materials. A number of attempts at kerb side recycling in Durban and Johannesburg have also failed mainly due to public apathy.

There are no formalised systems for source separation of waste in South Africa, although various trials are underway. Due to the large quantities of recyclable materials in the waste arriving at landfill sites, informal salvaging is widespread. This practice

leads to unacceptable health and safety risks for the salvagers, as well as operating problems for the landfill staff.

One problem associated with the low value waste is littering. Litter can have significant consequences in terms of aesthetic and other environmental impacts, resulting in secondary consequences of reducing the quality of life, negatively impacting on tourism and in its worst case, health impacts. A particularly troublesome component of litter is packaging waste, e.g. plastic bags. Hence, this framework for recycling will also address the problem of litter. It is recognised that the problem is complex since it relates to human behaviour, as well as the free availability of consumer items that are discarded as litter.

A number of *private sector organisations* are currently active in recycling initiatives including the pulp and paper industry, the Glass Recycling Association; Collect-a-Can, the Plastics Federation of South Africa; the Packaging Council of South Africa (PACSA); the Tyre Recycling Association; and the National Recycling Forum. This private recycling sector plays a significant role not only in directly recycling of materials, but also as co-ordinators in the collection of recyclable material through local agents.

The South African experience of the successful implementation recycling initiatives has demonstrated the importance of consulting and involving the complete recycling chain (*Background Document*, Section 4). This includes:

- Consumers, e.g. Households, retailers, industries, SMEs, and institutions;
- Collectors, e.g. Municipalities, private organisations and the informal sector;
- Waste processors, e.g. private sector companies and the informal sector;
- Brokers – who buy and sell recyclable materials;
- Converters – who buy recyclable material and alter them into a form that is readily useable by a manufacturer, e.g. recycled plastic pellets to be used by plastic extruders;
- End-use markets – who purchase recovered/converted materials to make new feedstock;
- Waste disposal, e.g. private sector and municipalities;
- Policy makers, e.g. different government departments;
- NGOs, Community and Consumer Groups;
- Research Groups.

The implementation of successful recycling initiatives is not a short-term activity but rather an ongoing initiative that must be reviewed and revised based on experience. An ongoing campaign will be required to change people's behaviour and to take responsibility for their waste. All stakeholders must take responsibility and their activities need to be integrated into holistic waste management planning.

Recycling is not a *panacea* for environmental problems nor should it be pursued to the point of diminished returns or at any cost. A full appraisal of the social, environmental and economic benefits and cost of recycling, in comparison with one-way consumption and disposal of used products and packaging is essential to decide on the appropriate roles and mechanisms for recycling, for specific circumstances.

#### 4. PRINCIPLES AND OBJECTIVES FOR RECYCLING

The Constitution, the Environmental Management Policy, National Environmental Management Act, the Integrated Pollution and Waste Policy and the National Waste Management Strategy require the following *principles* to be adhered to for recycling initiatives:

- *Equity*: There should be equitable access to environmental resources, benefits and service to meet basic needs and ensure well-being.
- *Full-cost accounting*: Decisions must be based on an assessment of the full environmental cost and benefits of activities that impact on the environment.
- *Inclusivity and Participation*: Environmental management processes must consider the interest needs and values of all interested and affected parties in decision making to secure sustainable development.
- *Integration*: Integration of environmental, social and economic considerations in the achievement of sustainable development, management and allocation and execution of functions.
- *Polluter pays*: Those responsible for environmental damage must pay the repair cost both to the environment and human health and the cost of preventative measures to prevent or reduce further pollution and environmental damage.

Specifically the main objectives for promoting and expanding recycling initiatives include the following (*Background Document, Section 4.1*):

- Job creation;
- Reduction of pollution and the conservation of natural resources;
- Conservation of energy and reduction of costs in manufacturing sectors;
- Litter abatement;
- Reduction of the waste stream itself;
- A reduction of scavenging on landfill sites.

In pursuing these objectives, the afore-mentioned principles need to be applied.

## **5. PROMOTION OF RECYCLING IN SOUTH AFRICA**

In order to realise the objectives set out in section 4 of this document, as well as addressing the current problems experienced with waste management and recycling as set out in section 3, mechanisms in addition to the currently applied free market forces need to be developed and implemented. Based on the evaluation of international and national initiatives as set out in sections 3 and 4 of the *Background Document*, it is recommended that various policy instruments be considered where appropriate to promote recycling and re-use of waste material.

An important objective of government policy on recycling should be to enhance the market conditions for recycling by finding an appropriate balance between securing the supply of recyclable materials and promoting demand for products made from these materials, while at the same time adhering to its social, environmental and economic policy principles.

### **5.1 *Priority Waste Streams***

Domestic waste is comprised of organic matter, paper, metals, glass, plastic and inert materials. All components of the waste stream should be reviewed for the feasibility of recycling. Institutional structures already exist in South Africa for the collection of paper/cardboard, glass, plastics, metals and oils, which are currently being recycled.

The intention of this framework is to provide guidance on the implementation of initiatives for sustainable recycling in a phased and prioritised approach. In the short-term those initiatives currently ongoing for the collection and recycling of paper, cardboard, glass, metals, plastics and oil should be further developed to meet the objectives of the policy principles. In the longer-term other commodities should be identified and reviewed for the viability of recycling. This could include tyres, building rubble, batteries, organic waste, electronic equipment, domestic appliances and associated components.

### **5.2 *Implementation of Policy Instruments***

On the basis of the background information and analysis, an appropriate set of policy instruments should be implemented, with the aim of achieving the identified political priorities relating to recycling. Government should specify what activities have to be undertaken and the timeframes for their implementation but should not necessarily prescribe the mechanism by which compliance should be achieved. A suitable forum should be used to consult with stakeholders prior to finalisation of the mechanisms, instruments and measurable objectives.

#### **5.2.1 *Regulatory Approaches***

##### **5.2.1.1 *Targets***

The recycling industry is complex and the issues surrounding its viability intricate and not always clearly defined. Proper planning is essential prior to the implementation of

recycling programmes or mechanisms for their extension. Key issues that need to be addressed include:

- The potential market for the recyclables and possible innovative developments for their end use;
- Technology currently available for recycling material;
- Raw material costs;
- The promotion of separation at source to recover cleaner material with a higher value;
- Design of commodity and suitability for recycling;
- Environmental impacts through the life cycle of the recycling chain for a particular commodity;
- Education, and capacity building and public awareness about the benefits of recycling.

Realistic targets should be set for the levels of recycling that are socially, environmentally and economically optimised in full consultation with the stakeholders in the recycling chain. A Recycling Forum should be established, which comprises representatives of all the stakeholders, which should be the mechanism by which targets should be negotiated before the introduction of policy. Guidelines used for implementing the targets should include the cost of collection and handling, recyclability, life cycle analysis, market economic analysis, and job creation.

Targets should be set for the levels of recycling of glass, plastic, metals, paper/cardboard and oil and the timeframes for meeting them. In addition, targets should be set for reducing the quantity of domestic waste disposed at landfill sites by the local government. Furthermore, targets should be set for phasing out waste picking on landfill sites. Local government should consider mechanisms for encouraging waste recycling, for example waste separation at source, establishment of buy-back centres and clean material sorting facilities.

A phased approach to the implementation of targets should be adopted. The process of setting and implementing targets should be iterative and should be based on experience gained from their implementation. Interaction and consultation with the stakeholders through the Recycling Forum should be the basis for the monitoring of compliance and the review of the targets and timeframes.

The onus for developing business plans for meeting government's target level for recycling should be on the industrial sectoral organisations. Local and provincial government should be required to address the attainment of waste reduction targets within their Integrated Waste Management Plans.

Issues to be addressed in recycling plans include:

- Scope of recycling plan
- Commodity quantities and characteristics – current and future
- Existing recycling systems and practices
- Current costs of recycling
- Organisation structure
- Evaluation of alternative recycling options
- Assessment of alternative end use of commodity
- Collection and transportation systems
- Annual negotiation and agreement on fees for commodity collection
- Immediate and long-term objectives
- Partnerships
- Evaluation of economic instruments
- Environmental assessments
- Opportunity for job creation
- Public participation and public awareness programmes
- Recycling plan
- Recycling implementation programme
- Monitoring of progress to achieving targets.

#### **5.2.1.2 *Government Procurement Policy***

As a demonstration of its commitment to promote recycling, government departments should amend their procurement policy to include specifications for recycled content for products that they purchase and hence help create a stronger market for recycled products. This may include writing paper, lubricating oils, traffic cones, envelopes, and plastic desktop accessories.

All levels of government should revise their procurement guidelines to remove barriers to the procurement of products containing recycled material; e.g. ‘excessively stringent’ performance standards. Due consideration should be given to ensure that this will not result in unreasonable cost, inadequate competition, unreasonable delays, or inability to meet performance standards.

#### **5.2.1.3 *Registration of Recyclers***

The DEAT is currently in the process of developing a Waste Information System (WIS) database as central database for tracking waste throughout its life cycle, which is in keeping with a cradle-to-grave approach to waste management. All waste generators, transporters, and disposers of waste should be required to register with the WIS and

report specific information on an annual basis. The major generators of waste should be captured by the WIS system, which has made provision for tracking the amount of waste that is recycled. The major recycling initiatives that are associated with the production facilities for paper/cardboard, glass, plastics, oil and metals should be required to register with the database system. The criteria for registration should be discussed and agreed within the Recycling Forum.

### **5.2.2 Market-based Instruments**

A number of economic instruments can be used as incentives for recycling or to provide funding to implement recycling initiatives. These could include:

- Subsidies for collection or transportation of materials;
- Raw material charges;
- Tax exemption for recyclers purchasing new recycling equipment;
- Provision of low interest loans for purchase of recycling capital equipment;
- Landfill charges.

Assessing the benefits of the implementation of market-based instruments is complex and will require a full evaluation of the social, environmental and economic costs. Commodity producers should be afforded the opportunity to make motivated proposals for the use of market-based instruments in their business plans to be submitted to government.

Government, in partnership with DANCED, are currently undertaking a project, which will identify and evaluate market-based instruments appropriate to waste management, including recycling.

### **5.2.3 Information/Education Initiatives**

National government, in consultation and partnership with provincial and local government, should facilitate education, capacity building and public awareness programmes.

DEAT has established an Educational Capacity Building Unit whose main focus is on capacity building within government on environmental issues, including waste management and recycling. This should include programmes for local government to create awareness about recycling and to assist in promoting the benefits of source separation to the community.

A number of initiatives are currently ongoing within government, NGOs, CBOs and the private sector. DEAT should identify and disseminate information, for example through a waste recycling web page, publications, and as part of their ongoing awareness programme.

## **5.2.4 Recommendations for Further Investigation**

### **5.2.4.1 *Extended Producer Responsibility***

The experience of waste management in the EU is that despite the existing waste management policies the levels of waste continues to increase. Extended producer responsibility has been recognised as an important tool for achieving waste reduction and increased recycling and underpins the waste policy of several EU countries. (*Background Document, Appendix A*). It forms a link to integrated product policy that recognises the need to consider the total life cycle of products and services, and the importance of using preventative measures at source. Products for which this has been applied include packaging, electronic scrap, batteries, end-of-life vehicles, construction waste, textiles, furniture and graphic papers. In terms of extended producer responsibility requirements, the fillers of packaging and distributors have an equal responsibility to assume responsibility for collection, sorting and recycling of regulated materials.

The issues surrounding extended producer are complex and have led to a number of problems where it has been applied (*Background Document, Section 4.4 and Appendix A.4*). The feasibility of introducing policy for producer responsibility are far-reaching and should be fully investigated within the constraints of South Africa's socio-economic and environmental policies. Government should facilitate a feasibility study into the viability of introducing extended producer responsibility in order to identify the social, economic and environmental impacts, the priority waste streams, and where applicable the timeframes for implementation. This will be undertaken in full consultation with stakeholders.

### **5.2.4.2 *Facilitation of Recycling Initiatives***

Government should recognise and support the current initiatives for recycling and, in consultation with stakeholders identify any barriers to their sustainability. These may include for example provincial and local by-laws that affect the siting, operation and use of facilities involved in recycling, as well as statutes that have a bearing on the costs of products, processes and services associated with recycling. Mechanisms should then be developed to promote recycling and where possible remove any impediments to its sustainability.

### **5.2.4.3 *Review of Opportunities for Job Creation***

It is recommended that government facilitate a detailed assessment of the potential for job creation and associated extended benefits to the disadvantaged communities through the implementation of recycling initiatives, covering both formal employment and informal entrepreneurial enterprises.

## 6. THE WAY FORWARD

The way forward is based and guided on the success achieved to date. However, action to implement a programme that will ensure the implementation of the new policy principles is urgent and essential. Therefore, the following timeframes should apply:

<b>Activity</b>	<b>Timeframe</b>
Government to establish National Forum	May 2000
National Forum to discuss and investigate the feasibility of initiating and expanding recycling initiatives and to negotiate realistic targets	November 2000
Industrial recycling sectoral organisation compile business plans for priority waste streams	March 2001
Local government in association with provincial government to compile waste reduction plan	March 2001
Amend government procurement policies	December 2000
Major recycling initiatives to register with DEAT database	July 2001
National Forum to discuss and initiate investigation into the feasibility and desirability of extended producer responsibility	June 2000
Information, education and awareness initiatives	Ongoing