

# Plastic Colloquium

## PROGRAMME

### Plastics Colloquium

Hosted by the  
Honourable Minister of Environment, Forestry and Fisheries

South Africa

Ms Barbara Creecy



### Report

22 November 2019

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# Plastics Colloquium

## Report

Compiled for the Department of Environment, Forestry and Fisheries

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# November 2019

# Executive Summary

This report contains a summary of the deliberations of the Plastics Colloquium, hosted by the Minister of Environment, Forestry and Fisheries (DEFF), Minister Ms Barbara Creecy, on 22 November 2019 at the Birchwood Hotel in Boksburg, Gauteng.

The keynote address was delivered by Minister Creecy. This was followed by a panel discussion, facilitated by Mr Albie Modise (DEFF). The panel consisted of Anton Hanekom (PlasticsSA), Bala Nengovhela (South African Local Government Association [SALGA]), Mark Gordon (DEFF), Christina Trois (University of Kwa-Zulu Natal [UKZN]), Luis Avellar (Coca Cola), Morne du Plessis (World Wildlife Fund for Nature [WWF]) and Simon Mbata (South African Waste Pickers' Association [SAWPA]).

The Colloquium then split into the following six parallel sessions:

1. Product standards and certification
2. Product design, development and innovation
3. Integration of the informal waste economy
4. Biodegradable and compostable plastics
5. Infrastructure
6. Consumer Education and awareness

Each parallel session started with about five expert presentations and then continued into smaller groups discussing the following five questions:

1. What is working well on the management of plastics waste linked to [name of parallel session]?
2. What are the gaps in [name of the parallel session] that are leading to increased plastic waste generation?
3. What are the top five challenges and opportunities linked to [name of the parallel session] that are leading to increased plastics waste generation?
4. What support is needed by civil society/industry/government/research from government to improve the [name of the parallel session] space, consequently improving the effectiveness of plastic waste management?
5. What do you propose as the next steps to see positive change in the [name of the parallel session] space?

The facilitator of each parallel session presented a very short summary of the discussions during the closing plenary.

At the end of the Colloquium the Minister announced that a Master Plan with targets, dates and responsibilities will be developed, with three monthly reporting on progress with the implementation of the plan. In a year's time there will be a follow-up meeting where stakeholders will account for what has been done.

# Acknowledgements

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## Disclaimer

This report has been compiled from collective notes by a number of scribes whom assisted during the Colloquium to capture the essence of the discussions of the day. The views expressed in the report is therefore a combination of stakeholder views from different groups and not the views of the DEFF, Consumer Goods Council of South Africa (CGCSA), or CLiP and CSIR who compiled the report. The report has been reviewed by DEFF and the CGCSA and approved for release. Approval does not signify that the contents necessarily reflect the views and policies of government, the CCGCSA, Plastics SA, nor does mention of trade names of commercial products constitute endorsement or recommendation for use by any of the listed parties or the CSIR.



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# 1 Introduction

The concept of the Plastic Colloquium, provided by the Department of Environment, Forestry and Fisheries, was as follows:

“Plastics are inexpensive, lightweight and durable materials, which can be readily moulded into a variety of products that find use in a wide range of applications (Hopewell, 2009 and UN 2018). They have substantial benefits and have remained part of our lives for many years now. Plastics are found in containers and packaging (e.g., soft drink bottles, lids, shampoo bottles). They are also found in durable (e.g., appliances, furniture) and non-durable goods (e.g., diapers, trash bags, cups and utensils, medical devices). The plastics economy makes a significant contribution to the GDP of many countries through the support it provides to the manufacturing and other related sectors.

However, when they reach end of life, most plastic materials escape into the land and marine environment and take time to disappear. Plastics are increasingly considered as one of the problematic waste streams that are occupying landfill sites, illegal dumps, rivers and ultimately, oceans with dire consequences for aquatic life. Jambeck et al. 2015 asserts that plastic waste presents not only an environmental issue for African countries, but also a major socio-economic development challenge, which affects biodiversity, infrastructure, tourism, and fisheries livelihoods.

South Africa is addressing the challenge of plastic pollution and its impacts on human health and the environment. The study conducted by the Department of Environmental Affairs (DEA) in 2017 on Plastics Materials Flow confirms that packaging constitutes the largest component of single-use plastic waste that is generated in South Africa. The generation of single-use plastic waste in South Africa is likely to increase with projected increases in population growth and urban expansion. The growing middle class is creating large consumer markets for plastic goods, especially single-use packaging products. The sprawling informal economy has given rise to non-compliant single use plastic carrier bags that easily find their way into the waste stream. Moreover, most informal settlements are situated next to the main rivers in South Africa (e.g. Hennops, Jukskei, Palmiet, Umngeni etc.). The poor waste infrastructure and illegal dumping sites in these areas result in single-use plastic waste entering the river systems through to the ocean.

In South Africa, numerous efforts have been made through policy interventions that seek to discourage and minimise the use of plastics with an aim of addressing their effects on the environment and human health, these include:

- The National Waste Management Strategy (NWMS), which puts emphasis on the need to Re-use, Recycle and Recover waste, including plastic waste.
- The shared NEDLAC agreement between Government, Organised Business and Organised Labour to enter into a Memorandum of Understanding (MOU), considered the major policy intervention to curb the generation of plastic waste in South Africa to address the challenges associated with plastic waste, particularly from plastic bags.
- The Plastic Bag Regulations and the Compulsory Specifications for Plastic Carrier Bags and Flat Bags (VC8087).
- The plastic bag levy, which was introduced as part of controlling consumer behaviour and attitudes towards plastic bags.

However, a number of years have passed by, yet plastics remain one of the popular waste streams found in illegal dumping sites, landfill sites and oceans. For example, the latest National State of Waste Report indicates that over 50% of plastics in South Africa still end up in landfill sites. The current policy instruments have proven to be ineffective in delivering the expected results. There are persistent



challenges with respect to compliance and enforcement. We have also witnessed the increase in plastic bag use over time, since the promulgation of the above policy instruments.

The Plastic Colloquium aimed at bringing together all key stakeholders to come up with clear objectives that will influence policy direction for plastic waste management.”

“The Colloquium’s main objectives are to:

- Create a platform to engage representatives of government, private sector and civil society in building more effective partnerships to enhance plastic waste management.
- Promote discussions on sustainable management of plastic waste in the country.
- Create a national platform for the exchange of information on best practice, and identify and address bottlenecks with regards to management of plastic waste in the country.
- Identify the key economic opportunities that could be realised from plastic waste and discuss how to incorporate the informal sector in plastic waste recycling.
- Deliberate on mechanisms for the effective delivery of waste management services by municipalities and support thereof.
- Deliberate on technologies for plastic waste management suitable for South Africa.”

The theme of the Colloquium was: Plastic Waste and the Circular Economy

The Plastic Colloquium was held on 21st – 22nd November 2019 in the Gauteng Province targeting 300 participants and attracting 671 registered delegates. The emphasis was to bring together all the key stakeholders to discuss recent research, awareness campaigns, international best practises and policy direction around tackling the issues associated with plastic waste. The colloquium was positioned around six key working groups as proposed by the Minister:

- 1) Product standards and certification
- 2) Product design, development and innovation
- 3) Integration of the informal waste economy
- 4) Biodegradable and compostable plastics
- 5) Infrastructure
- 6) Consumer Education & Awareness

In the build up to the colloquium these working groups convened with their various role players to discuss key areas of focus, as well as to identify proposals to be tabled at the main event.

The first day of the Colloquium commenced with an exhibition from approximately 50 companies (small, medium, and micro enterprises [SMMEs], Co-operatives) on current projects and business models being used for the management, collection, recycling and reuse of plastic waste. The exhibition commenced from 12:00 to 18h00.

The programme for Day 2, which this report summarises, is available in section 2 of this report.

## 2 Programme for the day

The programme for the day is included in Table 1.

Table 1: Programme for 22 November 2019.

08:00 – 09:00	Arrival and Refreshments	
09:00 – 09:15	Opening Remarks	MEC Morakane Mosupye
09:15 – 09:30	Objectives of the Colloquium	DG Nosipho Ngcaba
09:30 – 10:00	Keynote Address	Minister of Environment, Forestry and Fisheries (DEFF): Ms Barbara Creecy
10:00 – 11:00	<p>Panel Discussion on Plastic Waste Management was as follows:</p> <ul style="list-style-type: none"> <li>• Mr Luis Avellar, Coca Cola General Manager of the South African Franchise – Consumer Good Council of South Africa (CGCSA)</li> <li>• Mr Anton Hanekom, Executive Director Plastics SA</li> <li>• Dr Morné du Plessis, CEO World Wildlife Fund for Nature (WWF) South Africa</li> <li>• Prof Cristina Trois, University of KwaZulu Natal</li> <li>• Mr Mark Gordon, DDG Chemicals and Waste Management DEFF</li> <li>• Simon Mbata, Chairman South African Waste Pickers' Association (SAWPA)</li> <li>• Mr Balanganani Nenghuvela, President of South African Local Government Association (SALGA)</li> </ul>	TBC
11:15 – 13:00	Breakaway Sessions with Working Groups, Panel Discussion with Experts	Working Groups
13:00 – 14:00	Lunch	
14:00 – 16:00	Discussion of Themes and Preparation of Written Report	
16:00 – 16:30	Concluding Remarks by Working Group Rapporteurs	
17:00	Closure	

## 2.1 Breakaway Session Programme

In addition to the programme for the day, each Commission or breakaway session had its own programme with invited speakers to inform the discussions as included in Table 2.

Table 2: Programme for each of the 6 Commissions or breakaway sessions indicating the invited presentations as well as the names of the facilitators.

COMMISSIONS	PRESENTATIONS	FACILITATOR
Product standards and certification	<ul style="list-style-type: none"> <li>Regulation and level compliance of Plastic products by Mr Thomas Madzivhe from National Regulator for Compulsory Specifications (NRCS)</li> <li>Introduction to Standardization and Certification by Ms Heleen Temple from South African Bureau of Standards (SABS)</li> <li>How standards affect recyclability on plastics and how recycling affects product standard by Ms Annabé Pretorius from South African Plastics Recycling Organisation (SAPRO)</li> <li>Mr Chris Whyte from Use-it</li> </ul>	Ms Julie Wells from the National Cleaner Production Centre (NCPC)
Product design, development and innovation	<ul style="list-style-type: none"> <li>Product design, development and innovation by Mr Sanjeev Raghubir from Shoprite</li> <li>Product design, development and innovation by Ms Lorren de Kock from WWF</li> <li>Ms Mandy Naude from Polyco</li> <li>Microplastics in freshwater environments: implications on aquatic and human health by Dr Eunice Ubomba-Jaswa from the Water Research Commission (WRC)</li> </ul>	Dr Nonhlanhla Kalebaila from the Water Research Commission (WRC)
Integration of the informal waste economy	<ul style="list-style-type: none"> <li>International experience of Integration of waste pickers guideline by Dr Melanie Samson from University of the Witwatersrand</li> <li>Transitioning informal to formal by Mr Dumisani Buthelezi from DEFF</li> <li>Ms Belinda Booker from the South African PET Recycling Company (PETCO)</li> <li>Mr Luyanda Hlatshwayo from African Reclaimers Organisation (ARO)</li> <li>Mr Tshepho Maselela from Limpopo Economic Development, Environment and Tourism</li> </ul>	Mr Eli Kodisang from Women in Informal Employment: Globalizing and Organizing (WIEGO)

Biodegradable and compostable plastics	<ul style="list-style-type: none"> <li>• Bio-degradable, compostable and bio based plastics By Prof Suzan Oelofse from CSIR</li> <li>• Ms Melanie Ludwig from The Organics Recycling Association of South Africa (ORASA)</li> <li>• Introduction to and overview of the Biodegradable / Compostable Working Group by Ms Nicky van Hille from Moss Group</li> <li>• Mr Maphuti Kgare from the Department of Trade and Industry (DTI)</li> <li>• Biodegradable and compostable plastics – a South African perspective by Dr Rob van Hille from Moss Group</li> </ul>	Mr Tshepo Moremi from Waste Bureau
Infrastructure	<ul style="list-style-type: none"> <li>• Infrastructure Development by private sector by Ms Pippa Gauche from Sasol</li> <li>• Local Government Waste Infrastructure Development by Mr Balanganani Nengovhela from SALGA</li> <li>• Mr Niven Reddy from GroundWorks</li> <li>• Mr Tinashe Machiridza from Oxfam SA</li> <li>• Mr Hanno Langenhoven from Wild Trust</li> </ul>	Ms Matlou Setati from CGCSA
Consumer Education & Awareness	<ul style="list-style-type: none"> <li>• Good Green Deeds by Ms Boitumelo Dlamini from DEFF</li> <li>• Ms Janine Osborne from PETCO</li> <li>• Mr Noah One from Church of God University Student Volunteers (ASEZ) -</li> <li>• Ms Sharne Woods from Sustainable Seas Trust (SST)</li> </ul>	Ms Mamogala Musekene from DEFF

### 3 Keynote Address by Minister Creecy

The Speech by Minister Barbara Creecy at the opening of the Plastics Colloquium as downloaded from [https://www.environment.gov.za/speech/creecyopens\\_plasticcolloquium](https://www.environment.gov.za/speech/creecyopens_plasticcolloquium) on 11 December 2019

MECs

Executive Mayors

Chief Executives and Management of Plastics SA, Consumer Goods Council of South Africa and other private companies and SMMEs

The leadership and management South African Waste Pickers Association, African Reclaimers Association and other Civil Society Organisation

Members of Academia and Research Organisations

DGs, and the management of government departments and public entities

Municipal Managers and leadership of SALGA

Members of the media

Ladies and Gentlemen

Let me first start by acknowledging and thanking the efforts of Plastics SA, and the Consumer Goods Council, and the South African Waste Pickers Association for working with civil society and government to plan this Plastics Colloquium. Furthermore, I would like to thank everyone [who] has set up an exhibition. I know I did not get to meet all of you yesterday but I will try to see those of you I have not seen later today.

A word of appreciation also goes to all who participated in the various pre-colloquium activities that have greatly assisted us in informing this event and ensuring that all of us become participants in the plastics discourse.

We are here to have conversations about plastic in the environment. Plastic has been around since the 1950s and its versatility has ensured its use in almost every aspect of modern life. The proliferation of plastic products has been attributed to the material being water-proof, durable, versatile and cheap.

Plastic products are used by almost every sector of the economy. Various sectors of the global economy benefit from numerous plastic use applications. Projections are that the global plastics economy is growing at a rate of 4% on an annual basis.

The South African economy benefits from the plastics economy. The building and construction, agriculture, automotive, electrical and electronic, mining and engineering sectors all continue to benefit from this thriving plastics economy.

Plastics and plastic products industry contributed around R76bn to South Africa's economy in 2016 – and according to Plastics SA, 60,000 people are employed in the plastics industry of which 47,000 are employed in the plastic products manufacturing sector.

South Africa's annual virgin plastic consumption grew to 1.544 million tons in 2018. About 53% of South Africa's total plastics consumption goes into the packaging sector and most of this is for single

use packaging applications. Plastic packaging is extensively used to prevent food waste, protect products against breakage, and extend the shelf life of products.

With the large and growing consumption and use of plastic, is a growing concern about plastic pollution. The very attributes that have made plastic such a successful product, are making plastic a highly problematic pollutant. A study conducted our Department in 2017 on Plastics Materials Flow confirmed that packaging constitutes the largest component of plastic waste generated in South Africa.

Microplastic particles are found literally everywhere. A 2018 Water Research Commission report documented the presence of substantial amounts of plastic particles in surface, tap, and ground water sources in South Africa.

Plastic pollution is also damaging important eco-system services: those crucial services nature provides free of charge. Plastic waste undermines the flood absorption and water storage capacity of our wetlands. It threatens catchments, river systems and estuaries and the crucial services they provide for people and nature.

A more recent 2017 study (by Jambeck et al) goes further to argue plastic waste presents a major socio-economic development challenge, which affects biodiversity, infrastructure, tourism and fisheries livelihoods.

Ladies and Gentlemen, efforts to discourage and minimise the use of plastics to minimise their effects on the environment and human health are not new in our country.

Twenty years ago, we passed the National Environment Management Act (NEMA) and the National Environment Management: Waste Act to provide the necessary legislative framework to prevent and to protect the environment from plastic pollution.

By the early 2000s we had already put Plastic Bag Regulations in place to address the highly visible plastic carrier bag pollution problem. The plastic bag levy was introduced in an effort to control consumer behaviour and attitudes to plastic bags.

The National Waste Management Strategy (NWMS) of 2009, put emphasis on the need to Re-use, Recycle and Recover waste, including plastic waste. Following the adoption of this strategy government at every level set out to minimize waste and establish recycling initiatives.

Both government and the private sector invested in infrastructure development in the form of waste buy-back centres, transfer stations, beneficiation centres and treatment plants. Support was made available for SMMEs and co-operatives organize, skill and employ informal waste collectors. Significant community awareness campaigns were conducted in schools, communities and through the media.

Government has not been alone in tackling the plastic waste problem. Industry has embarked on a range of voluntary schemes that have sought to encourage collection, return and recycling. These include innovative programmes to educate school children and use schools as collection points in communities where formal waste collection remains intermittent.

PETCO and the South African Alliance to End Plastic Waste have been in the forefront of many of these initiatives and I have noted with much interest the ambition to have a plastic waste- free South Africa in ten years' time. In terms [of] impact, these voluntary schemes reported in 2018 that 46.3 % of all plastic waste was being collected for recycling with 63% collection of recycling of PET bottles.

On balance, Ladies and Gentlemen the evidence before us suggests that much has been done. But I am sure we all agree much, much more needs to be done. That is why we are gathered here today. We want to combine our wealth of collective experience, our examples of good practice and the substantial goodwill amongst all our partners to relook at this complex and difficult problem.

What we need to help us achieve the ideal of a plastic waste-free SA by 2030 is a comprehensive plan to tackle the problem countrywide.

This plan must begin with households, and consumers who are conscious of why plastic litter damages our environment and who want to do their bit to help. Schools and school children must be harnessed to assist in the battle so that young citizens become aware of their environmental responsibilities while raising much needed funding for their schools.

Our anti plastic waste campaign must be supported by an ever-improving system of municipal refuse collection, which promotes separation at source. We must prioritise rural municipalities that lie along our major rivers, so we combine our resources to protect our freshwater ecosystems and stop plastic from entering our oceans.

There must be a clear role for informal waste collectors, whom I am told number as many as 60 000 in our country. These men and women must be given back their dignity. They must be systematically registered, organised, trained, equipped and protected from harsh, insanitary and dangerous working conditions.

Municipalities and other public facilities must assist in creating space for buy-back centres, transfer centres and processing facilities. Private-public partnerships must ensure we have basic equipment in these centres including conveyor belts, washing facilities, baling machines and forklifts, as well as, basic shelter and ablutions for those working there.

We need an efficient system to assist in the registration and authentication of new products so that research and development is incentivised. Government must help market new products for building, paving, road construction and so on to our sister Departments in the Human Settlements and Infrastructure space.

To guide us in how we develop the system, we need to go back to two important concepts: the first is the concept of the circular economy. The second is the concept of extended producer responsibility.

One of the most attractive solutions inherent in the 'circular economy' to how we help turn 'waste into worth'. The circular economy therefore requires integrating the entire product life cycle from raw material extraction, through product design, use and ultimately recovery and recycling or re-use.

This means we have to start to design plastic products for re-use and recycling, we have to think about the implications of this for standards and certification and ultimately for our regulatory environment.

An important consideration will at all times be how, over time, we reduce certain plastics from our value chain, particularly those we term single use. We do need as a collective, to agree, that there is not enough demand to absorb all these articles in the recycling chain.

Of major concern here is the issue of micro plastics. These are examples of where end-of-life considerations did not influence Product design resulting in the regulator needing to exercise regulatory powers to phase out or restrict the use of material. The South African Health Products Regulatory Authority is considering the revision of the Cosmetics regulations meanwhile SABS and DTI are working on standards.

Biodegradable and compostable plastics are newcomers to the SA plastics scene. They need to be properly researched and understood. If they are to have a place in our value chain they need to be regulated with appropriate registration and standards.

Last, but not least, we are going to have to mobilise our citizens to understand the problem plastic waste is creating for people and for nature. We are all going to have to change our behaviour: those of us who separate our waste at home must wash out containers before we dump it; those of us who like fast food need to demand alternative products to package our burgers, chicken and our coffees; when we shop we must take our recycled shopping bags and not demand new plastics. We must stop throwing waste out of car windows or dropping it where we eat. Those of us who are in government must ensure communities have a responsible means of disposing of waste if they do not have weekly collection. We must teach our children to love their country and their environment.

Ladies and Gentlemen yesterday when I was leaving, many of you told me how happy you were for the opportunity to meet many others who are working on plastic waste and how important this is as an opportunity to take our partnership forward.

This Colloquium is part of an on-going initiative – it not the end. Today we have a platform to converse, discuss, debate, think, listen and jointly agree on our master plan. From tomorrow we must begin the implementation. All your views are important, so please engage actively and ensure that your voice is heard in shaping South Africa's plastic future. What we decide here will have an impact on the generations that follow us. Let our children and our grandchildren not find that today we failed in our task.

I thank you



## 4 Panel Discussion

The panel was led by Mr Albi Modise, Chief Director: Communications at DEFF, two rounds of questions were posed to the panellists. Each panellist was asked a different question to respond to as follows:

### 4.1 How are municipalities dealing with the problem of plastic waste? - SALGA

Mr Bala Nengovhela of the South African Local Government Association (SALGA) pointed out that the current waste collection coverage for the country stands at 64% of households receiving a weekly waste collection service that is provided by the municipality. However, there are other role players and there is a need for more clarity on the different roles. He also suggested that there is a problem of underfunding for municipalities, since they have access only to 9% of the national budget. Extended Producer Responsibility (EPR) was then suggested as a possible funding solution to municipalities to focus on residual waste collections.

### 4.2 Is 'Operation Phakisa' working correctly and how can the protection of employment levels and environment standards be improved, or are current actions are enough? - DEFF

Mr Mark Gordon (DDG for Chemical and Waste Management at DEFF) asked the audience to reflect on how much is to be considered 'enough' when dealing with waste management. He also wondered whether, and how much, voluntary schemes and incentives are useful. The required capacity for enforcement was also discussed.

It was highlighted that there are already waste management systems and guidelines in place, but the focus should be moved on to look at the life cycle of the items to analyse every aspect (extraction, production, polymers, products design). Circular economy needs to be considered at a global scale following the approach of a common but differentiated responsibility, also on the international stage where spotlight on polluter had led to a higher drive for change. South Africa needs also to look at the specific circumstances and develop local solutions.

### 4.3 As an external academic observer, give an objective analysis of the situation of waste management in South Africa – UKZN

Prof. Cristina Trois (South African Research Chair (SARChI) in Waste and Climate at the University of KZN) said that technology has evolved but raised many points that are still a problem in the complex situation of South Africa such as: the capacity of municipalities to deal with the issue, the unavailability of some data (for example on waste composition), and the lack of sorting of waste at source.

In South Africa there are 278 municipalities and in KZN there are 68 landfills where 90% of waste is disposed of. However, there are very few engineers working at these sites, and often operators have

no idea of what comes into their sites. Citizens need to separate their waste at source, but they should also demand to know where the sorted waste end up. There is no clarity on what the figures provided about recycling levels in South Africa (37%) are referred to. Does it refer to quantities collected for recycling, or actually recycled quantities?

#### 4.4 Can you introduce the topic of plastic pollution, focusing on the oceans? – WWF-SA

Dr Morne du Plessis (World Wide Fund for Nature (WWF-SA) indicated that society is currently in the middle of a wakeup call about plastics and that this voice needs to be heard for successful long-term action. Impactful images, such as the one of a seahorse gripping a cotton bud, captured the global imagination, but the problem is far bigger than visible pollution: there are implications on human health and climate change (20% of greenhouse gasses are attributed to plastic production). The latter should be addressed looking at circular economy and the entire life cycle of products – the plastic industry have carbon emission due to extractions of fossil fuels and productions and throughout the whole product life cycle.

Dr du Plessis also spoke about the Carbon Tax Bill: it has been called tax but it is a price on carbon (and it's already very discounted) that aim at not offloading the responsibilities on society. Carbon tax can be seen as a disincentive in this first phase but should become an incentive to change behaviour.

The focus of industry is on waste management, but Dr du Plessis considers it not enough: improving waste management addresses symptoms but not causes and therefore all life cycle of products should be addressed. The WWF is working with partners and industry for creating an African Plastic Pact, which would be voluntary but would include accountability.

#### 4.5 Plastic recycling in SA increased in the past seven years, how can the industry grow leading to less damage for the environment? – Plastics SA

Mr Anton Hanekom (PlasticsSA) pointed out that plastic, if disposed correctly, is one of the most environmentally friendly materials when the whole value chain is considered. It is also compatible with the concept of circular economy. Globally, only 4% of crude oil is used for plastic production and the circular economy can close the loop. However, in South Africa there is no proper waste management in place, and it is not easy for citizens to be responsible. Awareness has started but the effort needs to continue. There is also a problem with duties: municipalities have the mandate to collect and dispose, but 70% of the recycled material is post-consumer and collection come at a very expensive price because it is done post disposal at landfills. Despite this, the increase in the use of virgin material (21%) is less than the increase in the use of recycled material (64%), showing a positive trend and focus on the recycling that was supported by the voluntary approach of industry. This situation could even improve if sorting at source was done and infrastructures were improved, especially close to the source. Design and innovation (maybe with the involvement of the Consumer Goods Council) must be used properly, making it easier to separate, collect, and recycle correctly, and avoiding over packaging. New materials must also be investigated. Composting should be improved, and awareness should be raised on how to reuse and separate waste at source. There is also the need for collaboration across the value chain, including government, industry and consumers.

#### 4.6 What has Coca Cola been doing to avoid plastic bottles from going to landfills and avoid it from ending in the environment? – Coca Cola

Mr Luis Avellar (General Manager of the South African Franchise of Coca Cola), said that most products reaching landfills can be attributed to specific manufacturers, and the producers of the consumer products have a responsibility to fix the problem. Coca-Cola was mentioned as a prime source of packaging going to landfill. This led to a strong corporate responsibility and to a proactive approach to tackle this issue. For example, one year ago Coca Cola launched a commitment for a plastic waste free world (in 2030 Coca Cola aims to collect and recycle 100% of items and use 50% recycled content in packaging). South Africa is at the forefront of the action and Coca Cola is launching a refillable bottle for coke (14 cycles) and changing from using coloured PET bottles to clear ones to increase recyclability.

Coca Cola is part of PETCO (a voluntary scheme) and pledged to increase recycling of PET bottles and have managed to change from 14% recycling 15 years ago, to 63% in 2018. Coca Cola's school recycling programmes in 2019 involved several institutes to increase the learners' level of awareness and their understanding of the value chain of plastics. There are also awards for innovative ideas presented by youngsters. Clean-ups are also organised around the schools and Coca Cola helps mobilising the collection of waste and its disposal. Mr Avellar also pointed out that solutions comes from partnering.

#### 4.7 Are waste pickers receiving enough support from government, industry and society, and are there growth opportunities for informal pickers? - SAWPA

Mr Simon Mbatha (South African Waste Pickers Association [SAWPA]) indicated that the association of waste pickers started 10 years ago. They have worked closely with DEA that gave substantial support (involvement, local initiatives), along with local government. Since 2009, there has been an effort to change the stigma linked to the informal pickers (for example changing the name from 'scavengers' to 'waste pickers'). The industry was also supportive, with many activities since 2011. Despite this support, it was not easy at the beginning because people do not recognise the fundamental role of waste pickers in the current waste management system in South Africa (they are the backbone of the industry). Informal waste pickers have also their own business initiatives based on former successes such as the 64% of plastic recycled in the country.

Local governments (under SALGA) have been also approached and SAWPA understood that there are similar problems for the local governments and the waste pickers. The focus to change waste management should therefore not be only on national government and industries (i.e. PETCO and Packaging SA) but should also include working with municipalities and communities.

Several communities were involved, and meetings were held with the waste pickers to share the difficulties pickers experience in their working environment such as on roads and at landfills. Waste pickers would like to be at their last generation: in the future the infrastructures and mechanisms should be good enough to deal with waste and pickers should be fully integrated into the system. This requires the help of civil society, communities, industry, NGOs, academics and government for an alternative waste management system. A concern was raised that key people (such as municipalities) do not always attend and participate in meetings.

#### 4.8 Has enough been done in the city, for example about townships, and why can key municipalities not take a lead for recycling? –SALGA

Mr Bala Nengovhela (SALGA) replied that one of the problems as highlighted by Mr Hanekom, from Plastic SA, is the absence of infrastructure and the need to operate close to the source of waste. This cannot be only a duty of the municipalities. The implementation of the EPR is key to have more funding to sustain waste management. It was mentioned that material recovery facilities (MRFs) and buy-back centres should be funded through EPR. These facilities are needed in all municipalities not only metro's. Metro's are doing their best, but it was asked whether this is enough. Some local governments are very underfunded and in severe constraints and are not able to do much more.

The Recycling Enterprise Support Programme (RESP) of government was also mentioned as a positive intervention supporting new entrants into this space.

#### 4.9 How is national government supporting local authorities? – DEFF

Mr Mark Gordon (DEFF) answered that Operation Phakisa programmes support the recycling economy, but that there are limitations, and the Recycling Enterprise Support Programme (RESP), is small. There are pockets of actions and initiatives, but they are small. The problem should be addressed at large scale to solve the system, looking into the single parts of the system but really focusing on the big picture. The infrastructures at the end of the pipe might be part of the solution, but product design and production protocols should also be the focus to reduce waste production in favour of a RRR-based approach (reduce, reuse and recycling) and of upcycling.

About separation at source, Mr Gordon reported that legislation is ready, but probably not all municipalities are, and infrastructure are not sufficient. Industry should help since they have knowledge and know how, which gives them effective power; for example, they could lead to an effective solution to the current problem that 80% of packaging that is not recyclable (multilayers for example). EPR is also more than 40 years old, but its mandatory implementation is way more difficult than the voluntary scheme. Accountability is another issue that should be addressed along with responsibility.

Mr Gordon, when enquired on whom has to be considered the polluter, said that this is a good question and that a detailed discussion is needed on who the polluters are. There should be a question about pressures and 'who is asking what' and, basically, whether consumption is driven from the bottom (by the consumers' demands) or from the top (brand owners that want to sell products and processes). He then suggested that bottom-up approach is becoming more prevalent as is happening with plastic straws: there is not any law that prohibit their use, but many people do not use it anymore.

#### 4.10 Is SA doing enough as a country (considering government, civil society, producers, NGOs) and is there a need for more regulations? – UKZN

Prof Christina Trois (SARChI Chair) was not prepared to answer because the topic is very complex, but rather followed up on previous questions. In particular, she highlighted that having new or upgraded infrastructure is not the only point to address, but that technologies should be also localised in the

most appropriate way – this is affected by lack of political will, resources, technological knowledge and availability of materials, all of which are ingredients for failure.

Prof. Trois said that there is a need to look at the system and its components – for example, rural municipalities need to be empowered to make the best decisions to maximise the valorisation of waste and for localisation of appropriate technologies. Society does not engage in recycling activities because it is regulated, but do so because of increased awareness and environmental consciousness. To optimise the system one needs to increase and spread the capacity, develop SMMEs and integrate the informal sector and for partnerships also with academia.

On top of looking at the effect of waste management on climate change (measuring emissions for example), one should also look at the effect of climate change on waste management: extreme events such as in Durban and the Umgeni river floods create tsunamis of water and plastic that accumulate and cannot be constrained by river booms. This makes the management of waste created during these events very difficult (also economically). This highlights that there are warnings and systems to protect people, but not to protect environment against marine litter.

#### **4.11 People are at the centre of the sustainable development in this moment now, rather than having the government telling what to do? – WWF-SA**

Dr Morne du Plessis (WWF-SA) stressed that this is a complex issue and that one has to look at the big picture, because all levels are interconnected (climate change, plastics, waste management). However, attention must be paid to every single part of the system. Tax is useful to limit the emissions. At current rates, carbon emissions from plastics in 2030 will be equal to the emissions of 100 Medupi power stations. Sustainable development is also often misunderstood; there is the need to develop commitment and 'collusion for good' among industries like for fisheries. In this latter case, the industry got together (despite brand competition) in a safe space for discussion. An intuitive system of 'traffic light' (green/orange/red tags) was developed in this way, without the push of consumers that actually bought in later on. There is also a big gap that needs to be closed between what is recyclable and what is recycled.

#### **4.12 How is the plastics industry going to address increased demand? – Plastics SA**

Mr Anton Hanekom (PlasticsSA) pointed out that sometimes irrational decisions have been taken to tackle marine litter and that decisions should be instead based on evidence, considering the impact of change over the entire value chain. Food security must also be considered – as an example he spoke about the plastic sheets around cucumbers that are 100% recyclable and can extend product shelf life to up to two weeks.

He also stressed that changing product materials and designs are useless if there is no collection, and if the behaviour of people does not change. Single use plastics should probably be reduced, but closing business indiscriminately is not the solution and could jeopardise occupation levels.

Waste collection should instead be improved: currently only high valued materials are collected but technology is improving the recyclability of more items, such as multilayers sheets. If collection is in place, there will be ways to recycle and reuse waste. But consequences must be considered: for

example, CSIR is thinking of putting plastics into road surfaces, but this might release more microplastic into the environment as an unintended consequence. Other examples of plastic waste utilization are in Costa Rica where they put any contaminated and not-recyclable plastic into cement. Pyrolysis to produce fuel from waste was also mentioned as an alternative waste management option.

Technology should be improved across the whole value chain and decisions shall be based on evidence. The solutions shall also be tailored since systems that work in other parts of the world could not work in South Africa due to specific characteristics such as climate or the balance between urban, rural and peri-urban areas. Transportation is also an issue that could be addressed by putting industries together to deliver in the same place. We need to identify technologies that are appropriate to the local conditions where the waste is generated, and apply the technology that will best serve the needs of that community. If the community need bricks, then we could deploy a brickmaking technology to address the waste issue, as an example.

#### **4.13 What is Coca Cola doing with respect to infrastructure to reduce plastics reaching the environment? – Coca Cola**

Mr Avellar from Coca Cola said that most products reaching landfill can be attributed to single manufacturers and Coca-Cola was mentioned as a prime source. A lot of work is going on for innovating design, for example for packaging. This is important because reducing waste would make the use of existing infrastructure more efficient, lowering the pressure. He specifically mentioned refillable and recyclable packaging.

He also pointed out that Coca Cola is involved in school activities and partnering, and that we should look at the scale of these initiatives: there are a lot of them (Coca Cola has activities with 900 schools), but there is limited impact and the good activities should be revisited and scaled up to build commitment.

#### **4.14 What is required to develop the informal sector in a fast-changing space? – SAWPA**

Mr Mbatha (SAWPA) pointed out that they are not discouraging education in schools, but that there is a problem in using the schools as recycling centres. Schools should be places for learning where best practices in waste management can be learnt. The government should give infrastructures to schools, but not use them as recycling points. He also pointed out that universities are not good in managing waste, and that an improvement should start from there, where the future administrators are trained.

Mr Mbatha also said that SAWPA is also thankful to the country for the steps in integrations and the achievements in working collectively - SAWPA wants to be an active role-player. He also said that as a country, there is inequality but there is a push for transformation. Everyone must be involved since there will always be waste and everyone has to share responsibility to manage waste.

## 5 Breakaway sessions

Each parallel session started with about five expert presentations (available at <http://sawic.environment.gov.za/?menu=357>) and then continued into smaller groups discussing the following five questions.

1. What is working well on the management of plastics waste linked to [name of parallel session]?
2. What are the gaps in [name of the parallel session] that are leading to increased plastic waste generation?
3. What are the top five challenges and opportunities linked to [name of the parallel session] that are leading to increased plastics waste generation?
4. What support is needed by civil society/industry/government/research from government to improve the [name of the parallel session] space, consequently improving the effectiveness of plastic waste management?
5. What do you propose as the next steps to see positive change in the [name of the parallel session] space?

Not all breakaway sessions followed the same approach. Some groups were asked to discuss all five questions at each table, while in other sessions the questions were divided between the tables and only question 5 was discussed by all. To capture the essence of the discussions in each breakaway session, only a summary of deliberations per question is provided, where available. Not all sessions had the time to consolidate their feedback, therefore the report provides as summary of the notes that was collected from the different tables.

This section of the report is therefore split into six subsections (one per breakaway) starting with a summary of the key points per expert presentation and followed by the discussion points captured under each question, these points are captured, as close to the wording utilised by the scribes in each group, as possible.

### 5.1 Product standards and certification

#### 5.1.1 Expert input

The following expert presentations were made:

##### **Regulation and level compliance of Plastic products by Mr Thomas Madzivhe from NRCS**

The current compulsory specifications covers the requirements for plastic carrier bags and flat bags that are made from virgin thermoplastics material or any percentage of recycled thermoplastics or filler materials that are intended for use to carry products from a point of sale to use. Refuse bags, barrier bags, bin liners, household plastic bags, zip lock bags or carrier bags made from materials other than those specified above are excluded, and therefore do not have to adhere to the specification.

Amendments to the Compulsory Specification for Plastics Carrier bags and Flat bags (VC 8087) include:

- New type classification (4 new types)

Type A: carrier bags or flat bags made from **petrochemical or renewable (organic) biomass resources (bioplastics) thermoplastic film**,

- type A.1 : 100% virgin material
- type A.2: containing post-consumer recycled material

Type B carrier bags or flat bags made from **biodegradable or compostable and or oxo-biodegradable material** or a combination of any of these materials:

- type B.1 :100% virgin material
  - type B.2: containing post-consumer recycled material
- Limit the use of Calcium Carbonate fillers in plastic bags films (the specific gravity (density) of the material shall not exceed one, in the case of density 1kg/m<sup>3</sup>).
  - Increase minimum thickness to not less than 30 µm
  - Additional marking requirements:
    - a. Regulate the use of self-declared environmental claims, including statements, symbols and graphics on plastic to prevent deceptive marketing or false claims of compostability, biodegradability or use of bio-based film composition materials- SANS 14021, *environmental labels and declarations — self-declared environmental claims (Type II environmental labelling*
    - b. Polymer identification code;
    - c. the type of bag (Type A or B) classification; and
    - d. Specific end of life disposal information for the type of bag.

There is an increasing awareness of the regulations around plastic carrier bags. Manufacturers and mainstream retailers and distributors are aware of the requirements with respect to the registration and thickness of plastic carrier and flat bags.

Small 'fly by night' manufacturers were highlighted as posing a challenge because they do not acquaint themselves with the regulations and requirements. They are also difficult to locate. Marking, no letter of authority (LOA) and non-conformity of production remains the biggest reasons for non-compliance.

In terms of compliance it was stated that the number of sanctions decreased between 2017 and 2019 and there are fewer manufacturers and importers not complying with VC 8087.

He pointed out that the following challenges remain:

- Lack of education and public awareness about re-use vs recycling;
- Not all plastics are regulated (source of visible pollution);
- Lack of recycling (nothing replaced 'Buyisa-e-bag');
- Regulatory funding from plastic levy not ring-fenced.

### **Introduction to Standardization and Certification by Ms Heleen Temple from SABS**

SABS is part of the legislative framework under the standards, Assurance, Accreditation and Metrology Institutions under the Department of Trade and Industry. The mandate of SABS is to:

- Develop, promote and maintain South African National Standards;



- Promote quality with respect to commodities, products and services for the domestic and export markets; and
- Provide conformity assessment services (certification, laboratory testing and local content verification)

She explained the standards development process in accordance with SABS Norm: 2018 and emphasized that the process is consensus driven, should not pose any barriers to trade, and anti-competitive behavior is not allowed in committees.

The purpose of standards and certification is to level the playing fields by removing variables, give access to markets, ensure efficiency, reduce waste and to contribute to the United Nations Sustainable Development goals. She also explained the difference between product and performance standards as follows:

Product standards	Performance standards
<ul style="list-style-type: none"><li>• Material Specific</li><li>• Physical characteristics and specified for a new product</li></ul>	<ul style="list-style-type: none"><li>• Not material specific</li><li>• Performance criteria is specified</li><li>• Durability is measured</li></ul>

The following challenges of product standards vs performance standards were highlighted:

- Assessments for the need of standards and the type of standards are required;
- Definitions for reuse, reduce and recycle should be defined and aligned across the industry; and
- SANS new focus on “Cradle to Cradle” will certainly support the plastics industry. One should however realize that a brick made from plastic is not flame retardant, but indeed a propellant.

In closure she also explained the certification process.

#### **How standards affect recyclability on plastics and how recycling affects product standard by Ms Annabé Pretorius from SAPRO**

Ms Pretorius highlighted that standards and certification can be relevant to raw materials (including virgin petrochemical and biobased) and recycled materials (in-house, post-industrial and post-consumer) as well as products in terms of their formulations, additives and fillers and manufacturing. Who is responsible to ensure correct material/product is being used?

The list include SANS, ISO, ASTM, EU, Brand owners/retailers, manufacturers and raw material producers. She indicated that product stewardship programmes are in place for catalysts, residual monomers and additives while SANS 1548-1 address food contact rPET.

Ms Pretorius indicated that the entire value chain is important from the raw materials, the additives, the application of the products (both the intended, as well as, the unintended applications), to the end of life waste management. Proper waste management include separation at source, waste beneficiation but also product organisations (for example e-waste, oil recyclers and pesticides) as plastics is a common material used in most products.

There is number of product responsibility organisations such as Petco, Polyco, SAVA and Polystyrene Association of South Africa, but we need compulsory membership and compliance of the members. One aspect that is not addressed is what happens to imported products. This needs to be regulated through an accreditation/certification body.

### **Civil society perspective on the issue of product standards and certification by Mr Chris Whyte from Use-it**

Mr Whyte stated that product standards is good for validation/authentication/definition/labelling. Every organization involved in the manufacture of all types of packaging and packaging materials can show their commitment to producing a safe, functional and legal product by obtaining certification to a standard. Certification is regularly required by customers as part of their supplier approval procedures. ISO, SANS, SABS and other standards are more about structural performance abilities and applications of plastics and preparation of materials but are not directed to recyclability.

Guidelines to assist organisations in establishing, documenting, implementing, maintaining and continually improving their management of eco-design as part of an environmental management system (EMS)? What are the pros and cons of SANS 14006, 14020, 14024, etc.? Should these SANS be mandatory for plastic products? These are non-certifiable guidance standards, intended to assist organisations in implementing eco-design activities within an EMS primarily but not exclusively conforming to ISO.

In contrast, the European certification of plastics recyclers (EUCERTPLAST) set out to develop standards that are enforced on the recycler, not the producer. The specific objective of this project is to develop a European wide certification scheme for post-consumer plastics recycling. This scheme will assess the good practice, the output quality and the gain in terms greenhouse gases done by the audited recycler. The intention is that the waste collectors will have a harmonised European tool to guarantee that the waste they deliver will be recycled in a sustainable manner by the recycler. The responsible recyclers will benefit from this certification which will consent an increase market for plastics secondary raw materials, a sound recycling activity and the increase recycled quantities. Moreover, this increased transparency will permit a quality guarantee to plastics converters. Consequently, this will lead to an increase use of recycled material in new products. The foreseen certification will work according to the European Standard EN 15343:2007, published in April 2008, aims to encourage an environmentally friendly recycling of plastics by standardising it. This standard is particularly focusing on the process for the traceability and assessment of conformity and recycled content of recycled plastics.

He emphasised that recycling of plastics does not begin with collection but rather with the design of products. Recycling processes are very often hampered by inseparable polymer composites, unnecessary use of additives or combining of plastics with other materials (paper, metal, fibres) in a way that does not allow for an easy separation. The essential criterion of product design currently is its high performance. The new challenge, however, should be to incorporate the recyclability aspect and to make it a requirement on top of the other performance criteria such as product safety, shelf life, marketing and branding, etc. It is important to balance those various objectives of a plastic product, without ignoring its recyclability. According to the Global Plastics Outreach Alliance definition, a product is considered recyclable if it meets the following conditions:

- The product must be made with a plastic that is collected for recycling, has market value and/or is supported by a legislatively mandated program;
- The product must be sorted and aggregated into defined streams for recycling processes.
- The product can be processed and reclaimed/recycled with commercial recycling processes;
- The recycled plastic becomes a raw material that is used in the production of new products;

PRE created [RecyClass](#) with the aim of improving the design of packaging so that it is easily recyclable into high-quality recyclates which can then be used in a new plastic product. Far too much plastic is not fit for recycling and is hence destined only for energy recovery (the last but one option in the waste hierarchy pyramid). RecyClass is a free online tool which enables the assessment of virtually any plastic package regarding its recyclability. The tool provides advice and recommendations on how to improve design in case the product scores rather poorly in the assessment. In the last steps of the evaluation, the product can be certified by an expert in order to use the RecyClass branding. By improving product design, RecyClass will help divert substantial quantities of plastics away from landfills and incineration plants, and ultimately help reach higher recycling targets while saving the natural resources.

Mr Whyte proposed a new eco-labelling involving a new combined colour and number system (traffic light labelling).

### 5.1.2 Summary of the discussions

The take home messages captured for each question and reported after all the answers in this session was on the initiative of the break group facilitator, which reported the take home messages back in the closing plenary.

#### **What is working well on the management of plastic waste linked to product standards and certification?**

- The good thing is that there are product standards and certifications. However, standards are not always focused on health implications but rather on the functionalities of the product. A product that is not recyclable may still adhere to standards.
- The strength in South Africa in terms of the management of plastic waste is that there is a demand. E.g. carrier bags are made from 100% recyclable material. This is a classic example of self-regulation where the retailer forced a certain standard or quality of product. Demand determines what goes into the product.
- In South Africa there is one company that pelletizes e-waste plastic. One still has to separate flame retardants from non-flame retardant acrylonitrile butadiene styrene (ABS).
- In Norway they made a decision to produce only two polymer bottles.
- We have to consider functionality. Can we limit the materials without compromising functionality? The standards should also not contradict each other.
- In Europe, recyclability is looked at as well as longevity. First world countries dump their wastes to 3rd world countries.
- We need to make it simple.
- Labelling should also be done but not all suppliers use the same materials in their products.
- Polymers should be limited in the case of single use products. Standards and specifications can cover this by limiting the number of materials and what is allowed. The correct labelling should speak to this.
- Standards may drive intended or unintended change in industry.

- Retailers need to use their power in terms of purchasing responsible brands in terms of the products they offer.

**Take home message:** The fact that standards and certification exists is a positive thing. Retailers must use their power to regulate items. Strong self-regulation and demand from retailers, manufacturers and consumers for decent quality standards in terms of plastic products.

**What are the gaps in the focus area of the product standards and certification that are leading to increased plastic waste generation?**

- Lack of awareness around recycling beyond PETCO and DEFF.
- There are no regulations governing the amount/quantity of packaging being used to package products (over packaging). Need to reduce the amount of packaging.
- Packaging should include better disposal or recycling instructions. To include clearer information on what is in the packaging and how to recycle/dispose of it. More education and awareness for consumers around this.
- This is also important for manufacturers, not just consumers (e.g. if a cell phone battery says it cannot be disposed of in a bin, what should be done with it?). Need clear instructions from manufacturers on what needs to be done with certain items.
- Packaging needs to be designed for recycling which is sometimes/mostly not the case e.g. mixed materials used in yoghurt containers. These mixed material products result in further separation being needed into recyclable and non-recyclable.
- Expanding current SANS standards to include reusability and recycling.

**Take home message:** Lack of general awareness amongst users. No regulation around how much packaging is used. Packaging design needs to be considered upfront. Better instructions on packaging need to be provided on how to recycle items (education and awareness). Value chain of communication starting with manufacturers, to distributors and ending with consumers knowing what can be done with the product at the end of its life.

**What are the top 5 challenges facing product standards and certification that are leading to increased plastic waste generation?**

- Design of certain containers are only usable for one purpose. This needs to be thought of upfront.
- No proper governing of the printing on containers. This can cause difficulties when it comes to recycling.
- There are no SANS standards for LD and HD plastics in South Africa. There are SANS standards for PET in South Africa. When looking at HD plastics, there are many additives which make the product non-recyclable.
- Everything using PVC goes to landfill. There is not enough PVC in South Africa to recycle and that is why it does not get recycled, but PVC can be recycled. There is very little packaging post-consumer recycling happening. This again links to the education and awareness issue around the ease of access to what can be recycled.
- South Africa does not have a proper take-back system through EPR industry
- No proper compliance to legislation
- Ban of single use plastics

- Lack of consumer awareness around standards and labels and what they mean.
- Association within industries
- PVC bottles produced in South Africa going to landfill with no solutions

**Take home message:** Design of products need to be looked at. Need standards around the printing on products. PVC is not recycled in South Africa. There is a lack of understanding by consumers around standards and what the labels on packaging means (education and awareness).

**What support is needed by Civil Society/Industry/Government/Research from government to improve the product standards and certification consequently improving the effectiveness of plastic waste management?**

Only had time to answer for Government/Industry:

- Strict regulatory element addressing the recyclability of plastic rather than regulation of the industry. Existing regulation has an industry focus. Provincial regulations are needed but need to be careful of trade barriers (trade barrier avoidance).
- No point having regulations that promotes recyclability of plastics when you don't have a market for the end product. Need to create a market for recycled plastic products.
- Preferential procurement from government can play a role in creating this market where government can decide that they are going to buy from particular local industries. Strict regulation for localisation (local content).
- Intervention on non-regulated imported material e.g. plastics from China that are not meeting the regulations and standards of the country. Specifications to restrict non-compliance imported materials and policing/monitoring of imported materials.

**Take home message:** A need for regulation of the recyclability of plastic rather than industry regulation. There is a need to create a market for recycled plastic products and this should include preferential procurement from government. Regulation and policing of imported plastic products is important.

**What do you propose as the next steps to see positive change in the product standards and certification?**

- Retailers aim to follow best practice in order to be competitive and accountable. In Europe it is regulated that the cap should stay on the plastic drinking bottle. We should stay away from specific design. An example is polony - we need good packaging around polony but we need the product to be kept fresh. Polony packaging is currently not recyclable. Currently there are no alternatives for this packaging.
- If a certain percentage of a bag must be recyclable the bag is given value.
- Consumers must be empowered to know what to look for.
- Retailers must use their power in terms of purchasing responsible and accountable brands on the products they offer. If it is not a compulsory standard it is a choice for the retailer but if it is then the retailer will comply.
- Should be mandatory for manufacturers, distributors, retailers to belong to a regulatory body. This way you have someone to go to if the standards aren't met. The compulsory

membership of the associations and the group must take full accountability to what is in the product and where it is going and the brand owner must be included in that group.

- Expanding current SANS standards (and other standards) to include re-usability and recyclability.
- Education and awareness drive across all spheres on recycling and re-use.
- Promote standardisation of solutions to plastic waste and incentivize compliance (tax incentive).
- Develop standards for all plastics.
- Should have a proper buy-back system through EPR (deposit-return system) which is more easily accessible to more people.
- Design – non-recyclables should be banned.
- Compulsory industry affiliation membership, including importers.
- Labelling system to be harmonised.
- Perception that SABS owns the standards. Participation of all key stakeholders (at all levels) should be included in the development and management of standards.
- When developing standards there needs to be consideration and combination of other global standards.
- Specifications to restrict non-compliance on imported materials.

**Take home message:** We need to keep talking

## 5.2 Product design, development and innovation

### 5.2.1 Expert input

The following expert presentations were made:

#### **Product design, development and innovation by Mr Sanjeev Raghubir from Shoprite**

Mr Sanjeev Raghubir spoke about the South African Alliance to End Plastic Waste.

He suggested that technology and innovation should be utilised across the value chain to increase recycling content in products, include collection e.g. Packa-ching, secure demand for recycle and development of end markets.

There are currently design guidelines:

- 1) Design for recycling by The Packaging Council of South Africa (PACSA)
- 2) On pack recycling logos (OPRL) (how to use the logo)

Potential deliverables listed include:

- New end markets
- Increased recycled content in products
- End of life applications
- Strategy for implementation
- Supportive and enabling policy

### **Product design, development and innovation by Ms Lorren de Kock from WWF**

Ms Lorren de Kock spoke about plastic design for circularity

- There are guidelines for designing from start to end use
- The current gaps in product design and innovation include:
  - o post-consumer content,
  - o awareness,
  - o reuse models,
  - o design out problematic formats,
  - o on pack recycling labels
- Challenges include:
  - o competition,
  - o fragmentation of the industry,
  - o little incentive to shift to circular economy, and
  - o food grade application
- Support is needed from government to shift to design for circularity

### **Ms Mandy Naude from PolyCo explained the role of PolyCo and introduced PACKA-CHING**

PolyCo is a Product Responsibility Organisation for Polyolefin recycling which looks at innovative ways of addressing waste. They came up with a model called PACKA-CHING which is a network of mobile recycling units. Individuals bring recyclable packaging material (plastic, paper, metal cans and glass) to the PACKA-CHING mobile recycling units that travel between communities, and exchange the recyclables for money that is loaded into an e-Wallet account. Successfully appointed entrepreneurs are awarded a 'business-in-a-box' with a vehicle, trailer and all the equipment necessary to run a successful PACKA-CHING unit. The vehicle is paid back in monthly installments beginning after six months of operation, ensuring that the entrepreneur can take ownership of this asset once repayments are complete (typically over 5 years). They operate mostly in informal areas

- We need innovative models to make recycling convenient

### **Microplastics in freshwater environments: implications on aquatic and human health - Dr Eunice Ubomba-Jaswa from WRC**

- Microplastics in freshwater have implications on aquatic and human health
- Design and innovation needs to take into consideration microplastics and how these have negative consequences on ecosystem and human health.

## **5.2.2 Summary of the discussions**

### **What is working well on the management of plastic waste linked to product design, development and innovation?**

- OPRL on packaging logos, as it pushes packaging industry coming up with better options

- Voluntary EPRs is working well (SASOL).
- The guideline for recyclability is working well for brand owners.
- Brand owners and designers are working together to improve and hence partnerships should be driven as it is working well.
- Customers are starting to appreciate the recyclability of packaging.
- Collaboration is happening.
- This South African Initiative to End Plastic Waste is a good platform to collectively discuss matters that affect this commission.
- Collection and waste reclaiming is working well.
- High level R&D as presented by the experts does take place in South Africa and it is often suited to local conditions.
- Application for recycling innovation amongst the highest in the world.
- Development of standards / guidelines.
- Design for recycling guidelines are available with certain key targets (for example 30% recycled content as determined by the Plastic Pact).
- Polymer identification symbols are working well.
- Increased global sharing of knowledge – the world is getting smaller.
- There is lot of awareness and conversation around the issue of plastic waste (SAPRO, PROs) awards.
- Targets committed internationally (SA Plastics Pact).
- Package designs are aligned with UN SDG's.
- Good policies, regulations in place but still need to move away waste regulations hampering circular economy.

**What are the gaps in the product design, development and innovation that are leading to increased plastic waste generation?**

- Retail don't have full control when importing products, as some products are imported. Their efforts are minimized because of imports. Overseas manufacturers won't change for small percentage business in SA.
- Policies. There are no policies for plastic products, with the exception of bags, in South Africa.
- Collectors don't pick up 'jars' (plastic containers with plastic shrink sleeves) because of sleeves that are not easy to separate. Industry is working on perforation.
- All new products should confirm with guidelines on recyclability and legislation should be affected to that effect.
- Slow movement to design out certain packaging – contains materials not ideal for recycling.
- Process is slow – question is should industry wait for new designs to catch up or proceed with their own new designs.
- International companies are used – cost may be a factor when considering options of recyclability or not.
- Over engineering comes at a cost.
- Uncertainty in terms of legislation and policy – design for recycling – but no communication with the actual designers and people are uninformed and make emotional statements.
- Government should not only develop policy and legislation but should involve and engage industry from the start.
- Do individuals take material off the shelf if not completely recyclable?



- Packaging of food – post consumer recycling concerns – openness to customers re packaging will help.
- What is recyclable is not well understood by all brand owners e.g. PET water bottles with sleeves on – need to perforate.
- It is not about competition, it is about what is better for South Africa – thus collaboration must be wider.
- Investment in hardware. We have the ability to source the best available technology.
- Global brand owners often bring high levels of technology and innovation. This information is usually IP (intellectual property) protected and we need to create platforms to share and increase our collaboration without infringing on IP.
- Funding is still a big gap for development of new manufacturing technology like food-grade material (PCR recyclate).
- Knowledge sharing, especially to civil society and a platform for education and awareness.
- Packaging design – still a lot of air package – we need to design to minimize air.
- Gap in returns of materials for reuse, steady flow of recyclable back into the value chain.
- Language / terminology which is confusing people around (circular economy, green economy).
- Not enough understanding on the negativity of bio-degradable (as it is defined for plastics).
- Look at having a platform to discuss opportunities available in recycling of waste products (SA Initiative and SA Plastics Pact).
- We are trying to take all the SDG's at once.
- Not enough awareness amongst communities/ consumers/brand owners/ retailers/ producers.
- Research outcomes are disseminated to industry and other forums but needs to go wider to packaging designers and other stakeholders involved in product and packaging design.
- Co-ordination and implement the existing regulatory tools.

**What are the top 5 challenges facing product design, development and innovation that are leading to increased plastic waste generation?**

- Sleeves and separation and economics of it.
- Fresh foods go into PET which is not collected and recycled (recyclable but not recycled). Reason – affiliation issues.
- Product formulation and design – movement is slow and limited availability of alternatives to replace the packaging materials.
- Industry only waking up now to recyclability, now it becomes a race and takes time to join the initiative.
- Chemical innovations take longer than mechanical innovations/methods.
- Food spoilage – food waste vs protected food challenge or trade off.
- Access to clean post-consumer waste. Lack of food-grade PCR linked to this.
- Chemical recycling – there needs to be a place in South Africa for that.
- Technical expertise and information to brand owners.
- Separation of the different polyolefin streams.
- Optical sourcing technologies, like using machines that use infrared to separate and sort.
- Lack of multi-layer technology to utilize r-HDPE.
- Space for trialing.
- Quality assurance & grading of recyclate.
- Regulation of what is expected for food grade standards.

- Better leverage existing forums and platforms to share standards to make sure they are known of and well-circulated.
- Revisit the terminology used to be more inclusive and to consider urban vs. rural design.
- Better collaboration across the value chain (SA Initiative, Plastics Pact etc.).
- Studies to inform product design and innovation which includes water, human health, academics, economists, holistic representation.

**What support is needed by civil society/industry/government/research from government to improve product design, development and innovation and consequently improve the effectiveness of plastic waste management?**

- Importation of material – quality control to increase the value of imported material – import quality checking – government support needed.
- Tariff codes are not adhered to – fraud.
- Incentives.
- Top to down system forced by Government on all e.g. sugar tax.
- The minister of DEFF needs to officially endorse this commission (of the Plastics Colloquium) to act as her advisory board on all matters.
- Education, Training and Awareness (practical training workshops)
- Make the On-Pack Recycling labelling mandatory – gazette the current labelling guidelines
- Separation at source should be mandatory.
- Product Standardization & Regulation (for example a design catalogue).
- Extended Producer Responsibility (EPR) should be mandatory.
- Reduce import of already finished product into our country.
- Endorse the Industry Waste Management Plan.
- Regulation of price of recycled plastic. Currently virgin prices are higher than local recycled plastic.
- Regulating the importation of recycled plastics at lower cost.
- Define the roles and responsibilities for each player within the system.
- Adapt the existing international regulations (e.g CODEX) for the local context).

**What do you propose as the next steps to see positive change in product design, development and innovation?**

- The minister of DEFF needs to officially endorse this commission (of the Plastics Colloquium) to act as her advisory board on all matters.
- Collaboration.
- Weighing the balance/benefits between the production of plastics and the impacts of micro plastics in the ecosystem from plastics in the environment.
- Strengthen awareness drive amongst suppliers.
- Product design standards for each and every sub-section of industry (e.g. manufactures, retailers.
- Separation at source.
- Demand in the market.

### Key summary points from all the roundtables

- Good regulations, policies and innovative concepts already exist in the sector.
- Biggest gap is implementation and coordination.
- Recommendation: to increase education and awareness.
- Need for defined roles and responsibilities and more accountability.
- Design for circularity and not just recycling.
- Need for the right kind of evidence to be used to share with stakeholders.
- More collaborative approaches to solving the problem with polymer producers, recyclers, converters, retailers and government – they need to come to a solution together.
- Need for greater connections so that we can all speak the same language.
- EPR needs to extend across innovation sector – everyone needs to contribute.
- Separation at source is critical and will enable the recycling industry to get better design and testing.
- Need for the minister to endorse this body so that we can track serious issues.
- Post-consumer recycling containment – there must be enough to ensure recycling.
- Product design tracking platform – indicating how product closed the loop.
- Supply of clean post-consumer recyclate will be critical.

## 5.3 Integration of the informal waste economy

### 5.3.1 Expert input

1. International experience of Integration of waste pickers guideline by Dr Melanie Samson from Wits University
2. Transitioning informal to formal by Mr Dumisani Buthelezi from DEFF
3. Ms Belinda Booker from PETCO
4. Mr Luyanda Hlatshwayo from ARO
5. Mr Tshepho Maselela from Limpopo Economic Development, Environment and Tourism

The key points from the presentation are:

- Waste pickers are not recognised for their contribution in the waste management sector.
- They are not paid for the service they provide from the entire value chain (unrecognised, unpaid labour).
- Criminalization of the waste pickers. For example, police burn and confiscate their material.
- Main challenges faced by waste pickers include:
  - o Lack of support from municipality.
  - o Lack of access to landfill (low recyclables recovered).
  - o Unsafe working conditions.
  - o The recycling industry demands too large quantities of recyclables, which waste pickers are sometimes not able to deliver because of lack of transportation.
  - o Lack of land.
  - o Child labour.
- Efforts to recognise the waste pickers have been done through donations.
- Waste pickers do not want donations, but they want collaboration with all the relevant stakeholders.

- Waste pickers do not want to be employed; however, they want to be recognised as small businesses that need support.
- Integration of the waste pickers in the waste sector should be built on the existing system.
- There should be collaborative decision making with all the relevant stakeholders to avoid unintended consequence.
- Support needed by waste pickers include:
  - o Develop policies that enable participation and decision making.
  - o Municipalities must equip waste pickers with land and industries must support with, equipment, infrastructure, recycling hubs and trucks.
  - o Funding and support for registering waste pickers.
  - o Regulate pricing of recyclables to prevent exploitation by Middlemen.
  - o Implement waste picker guideline.
  - o Payment of waste pickers for the service they provide.

### 5.3.2 Summary of the discussions

#### **What is working well on the management of plastic waste linked to the integration of the informal sector?**

- Contribution of waste pickers to the recycling of plastic.
- Waste pickers are currently collecting on average between 70% and 80% of plastics being recycled in SA.
- Policy changes as well as the Waste Picker Integration Guidelines.

#### **What are the gaps within the integration of the informal sector that are leading to increased plastic waste generation?**

- Pricing issue and low value paid for plastic because waste pickers will focus on high value items.
- From industry point of view, how to structure/organise informal sector so that industry can engage and support in a meaningful way.
- Lack of registration of reclaimers as registration will give us a view of the real number of people involved as well as volumes of different streams.
- Lack of data = lack of visibility.
- Lack of infrastructure.
- Lack of awareness. Recycling Education in ALL Sectors - Example given of Oxfam working in Tembisa- whereby education is given, households are taught how to separate waste and the streets are clean and plastic is recycled.
- Fast urbanization.
- Ignorance – buy and dispose nation.
- Lack of collaboration between stakeholders – if the municipality can work with waste pickers, then there can be more efficiency. There needs to be acknowledgement of role of all role players

#### **What are the top 5 challenges facing the integration of the informal sector that are leading to increased plastic waste generation?**

- Top-down approach.

- Low engagement with reclaimers resulting in not truly understanding their context + requirements (especially from a funding perspective).
- Lack of design-for-recycling at industry level.
- Presence of single-use plastic.
- Lack of political will, as well as lack of capacity and capability, especially at the municipal level.
- Lack of access to the waste - permit conditions of landfill forbids picking – laws and licenses to be amended.
- Lack of Working space/excluded.
- No separation at source legislation (guidelines are not enough).
- Lack of receptacles and recourse – i.e.: bins, bags for households.
- Lack of funding for municipalities to implement separation at source
- Municipalities cannot work with thousand individuals waste pickers who do not want to register.
- A lack of transport and value chain support for collectors – the value of waste is lost through the complexity of the value chain.
- The idea of fostering a relationship between waste pickers and suburb residents – communicating between residents and waste pickers. If residents knew their suburb waste pickers, then recycling can be more effective.

**What support is needed by Civil Society / Industry / Government / Research from government to improve the integration of the informal sector consequently improving the effectiveness of plastic waste management?**

- Inclusive circular economy.
- Policy framework to incentivise industry to design-for-recycling and/or invest in infrastructure.
- Funding.
- Education and Awareness – public, municipality – national awareness.
- Infrastructure.
- Land.
- Implementation of the Guidelines.
- Enforce separation at source.
- Enforce registration of all waste pickers – and must belong to an organized body (SAWPA / ARO)
- ARO / SAWPA – to ensure registration and “managing” the waste pickers.
- Infrastructure for waste pickers - communal facilities use for waste pickers. Like a baler truck being put into strategic areas.
- Support for the department of health etc., to assist waste pickers in their exposure to waste hazards.
- Support through a regulation system that does not rely on having SA ID (South African identification) books.
- Support for regulated at the landfill, so facilities on site for collectors.

**What do you propose as the next steps to see positive change in the integration of the informal sector?**

- Consumer awareness programme.
- New recycling initiatives, including separation at source, based on existing systems which have been proven to increase recycling rates.
- Implementation of the guidelines.

- Evidence based decisions.
- Registration of all waste pickers.
- Collaboration – all stakeholders to get together, establish working groups and start implementing.
- Assist waste pickers to access funds (GDARD/etc.).
- There needs to be more public education about waste pickers, so the stigma is broken.
- There needs to be more transparency and regulation in the pricing along the value chain, that way they're getting a fairer return on the work they are doing.
- The waste pickers need to be paid directly, can we take out links in the value chain (less middleman) and make payment for direct collection fairer?
- There needs to be market price regulation for buying and selling.
- There needs to be more satellite buy-back centres or buyers or something so that there is less transportation for plastics waste.
- Decouple the pricing of Virgin plastic and recycled plastic.
- There is not enough of an end-use market for recyclers and waste collections, there is not enough competition in the market. We need to see more enterprise and supplier development funding for post-consumer and industrial waste to be bought and sold.

## 5.4 Biodegradable and compostable plastics

### 5.4.1 Expert input

#### **Biodegradable, compostable and biobased plastics research – Prof Suzan Oelofse of CSIR**

Prof Suzan Oelofse highlighted that international research focus on two main aspects: 1) using bio-based input material as a move towards renewable feedstocks for plastics production, and 2) increasing the biodegradability of plastics for improved end-of-life sustainability. Both aspects involve addition of additives to improve inherent limitations of bio-based plastics or to enhance the recyclability of petroleum-based plastics. The fate of these additives in the environment is still largely unknown and the conditions for biodegradation are variable. The focus of the research therefore also on sustainability and degradation under different conditions. The findings from the research suggest, amongst other that:

- Bio-based plastics are not necessarily more sustainable than petroleum-based plastics
- Most bioplastics only degrade to a limited extent even in industrial composting facilities
- Biodegradable plastics are unlikely to decompose spontaneously in landfills or in the environment
- Biodegradation is slowed down in dry climatic conditions

Current research undertaken by the CSIR include the development of:

- Bio-based polymers and bioplastics from waste biomass
- Bio-based composites for advanced industrial applications, and
- Recycling solutions for unrecyclable plastics from WEEE (Waste Electrical and Electronic Equipment)

The CSIR have a biodegradation testing laboratory for in-house testing of newly developed biopolymer blends and composites and are able to test local and imported biodegradable and compostable

products to international standards. The CSIR also conduct life cycle sustainability assessments of plastics and alternatives to conventional plastics. To support the transitioning from conventional plastics to more environmentally sustainable alternatives. United Nations Industrial Development Organization (UNIDO) and CSIR is conducting a joint project with funding from the Japanese government to develop an action plan for South Africa.

**Introduction to and overview of Biodegradable/Compostable Working Group by Nicky van Hille from the Moss group.**

Ms Nicky van Hille provided an overview of the activities of the working group as part of the CGCSA plastics initiative. The four main reasons for this working group was highlighted as:

- 1) The increasing demand for plastics,
- 2) Lack of understanding and misinformation,
- 3) Highly emotive subject,
- 4) Science-based research is not consolidated.

In the context of SA there are three initiatives currently under way:

- Position paper on the current context including the following topics:
  - o Product definitions
  - o Acceptability and appropriate applications
  - o Raw material sources
  - o Regulation and certification
  - o Waste management
  - o Advertising and communication
  - o Consumer engagement
- Consumer awareness campaign
  - o An information brochure has been developed and is available online <https://www.plasticsinfo.co.za/wp-content/uploads/2019/09/Alliance-Biodegradable-position-paper.pdf>
- Strategy: future context still has to be drafted in the months to come.

**Organics Recycling Association of South Africa (ORASA) by Melanie Ludwig**

Ms Melanie Ludwig mentioned that biodegradable and compostable are two different things and therefore would propose that we use the term compostable rather than biodegradable. ORASA aim to ensure that certified compostable plastics are correctly sourced and processed to produce a compost that has value and contains no harmful residues. She cautioned that compostable plastics may lead to increased littering due to a misconception as compostable PLA cups for instance must be composted to ensure they break down. She highlighted many types of compostable plastics packaging that would be fit for purpose and could be considered especially small packaging items that often contaminate compost. She also cautioned that compostable items may end up being miss sorted and end in the recycling bin so sorter training will be essential.

She pointed out that currently there are only a few suppliers that have the correct certification with clearly marked conformity logos on the product. This also creates a dilemma for composters since non-compostable and compostable products are not easily distinguished and extra processing e.g. shredding and soaking is required to compost these items. She advise that only compostable or only

recyclable products should be used in closed system to eliminate confusion. Current labelling is confusing.

ORASA has drawn up draft field testing guidelines for composters to enable composters to test products according to their specific composting methods. The guideline will prove degradability but not detect residual chemicals. This guideline will assist to determine if certified products (laboratory certified) are compostable at local composting facilities.

The issue of charging gate fees for accepting compostable plastics was also raised considering the potential contamination of compost with plastics and the additional processing that will be required. The question is therefore if producers will be willing to pay gate fees to make the extra effort worth it for the composters?

In closing she mentioned that huge investment will be required in composting facilities to handle large volumes of waste that could be generated. It should also be noted the compost will end up in the soil and it is vital that only genuine compostable plastics are accepted for composting to protect the soil for food production.

#### **South African perspective on biodegradable and compostable plastics by Dr Rob van Hille from Moss Group**

The current applications are mostly consumer facing products including straws, cutlery, bags etc. These materials are versatile and may be adapted to many more applications. The current value chain in SA does not provide for formal collection systems, not all composters take all these products, there is no monetary value to the waste and there is no Producer Responsibility Organisation (PRO) and no EPR fees are collected for biodegradable plastics. Degradation of biodegradable/compostable plastics only takes place in specified controlled conditions and it takes months to degrade. The degradation of these materials in the environment and landfills are still largely unknown.

Some key challenges associated with biodegradable plastics include:

- Improving education and awareness to address the information gap across stakeholders
- Messaging, labelling and certification management is required
- Fit for purpose application of these products – where should/shouldn't we be using these products and why? The cost implications of the transition should also be considered especially for application at scale (currently 3-4 times price of traditional plastics)
- Limited waste management systems currently in place
- Lack of EPR and PRO
- Potential environmental, social and economic impacts unknown

Key opportunities associated with Biodegradable plastics include:

- Development of coherent co-created strategy
- Integration of local production into SA bio-economy strategy
- Alignment on best applications
- Establishment of waste management system

## **5.4.2 Summary of the discussions**

**What is working well in the management of plastics waste linked to biodegradable and compostable plastics?**



- Research on biodegradable and compostable plastics is underway
- A working group has been established to look into this sector.

**What are the gaps in the biodegradable and compostable plastics space that are leading to increased plastics waste generation?**

- Lack of knowledge, education and awareness on the aspect of biodegradable and compostable plastics.
- Limited infrastructure available for management of the waste at end of life.
- Lack of proper certification and conformity logos on compostable plastics.
- Waste services focus on highly developed areas and not on rural areas.
- Lack of transparency on the chemical composition of plastic packaging.
- Possible increased leakage of biodegradable and compostable plastics into the environment. in an uncontrolled manner (littering) due to poor misleading/messaging.
- Cost prohibitive.
- Biodegradable and compostable plastics is not a solution to waste reduction (or reuse) or environmental protection from plastics.

**What are the top 5 challenges and opportunities facing the biodegradable and compostable plastics space that are leading to increased plastic waste generation?**

Challenges	Opportunities
<ul style="list-style-type: none"> <li>• Biodegradable and compostable plastics have only recently become mainstream;</li> <li>• Non-conformance and lack of transparency by importers to international standards;</li> <li>• Certification is cost prohibitive;</li> <li>• Limited organics collection and processing infrastructure across the entire chain of biodegradable and compostable plastics;</li> <li>• Behavioural change;</li> <li>• Wide variation in requirements for processing;</li> <li>• Quality of input material to composting needs to be tested;</li> </ul>	<ul style="list-style-type: none"> <li>• Focused research on SA climatic conditions in relation to biodegradable and compostable plastics;</li> <li>• Importers to start using international standards as a pilot;</li> <li>• Promote composting of organic wastes within communities and industries;</li> <li>• Economic potential for new industries, composting facilities;</li> <li>• Manufacturing of feedstocks through biorefinery;</li> <li>• Potential of growing of feedstock.</li> </ul>

**What support is needed by Civil Society/Industry/Government/Research from government to improve the biodegradable and compostable plastics space, consequently improving the effectiveness of plastic waste management?**

- More focused research (life cycle assessments) on where test cases can be used;
- Development of guidelines, norms and standards;
- Education and awareness;
- Transparency in terms of chemical composition and certification of biodegradable and compostable plastics;
- Public Private Partnerships for social enterprise development;
- Fit for purpose applications;

- Establishment of a PRO and associated EPR for biodegradable and compostable plastics;
- Charging of gate fees at composting facilities to process these materials.

**What do you propose as the next steps to see positive change in the biodegradable and compostable plastics space?**

- More research;
- Fit for purpose identification;
- Addressing misleading messaging for consumers (consumer protection act);
- Increased awareness;
- Improved waste management;
- Review of progress from this colloquium in 6 months;

## 5.5 Infrastructure

This session was facilitated by Ms Matlou Setati from CGCSA. Ms Setati introduced the session with a quote that originated from the Department of Environmental Affairs “Out of Community and Dialogue the answers will arrive in their own time, and win.” She spoke on individual passion for solving the issue of plastic waste as an instrument for implementing change through community-based solutions and shared education.

The session began with five presentations, followed by round table discussions answering questions on infrastructure in relation to waste management and plastic waste. Each table consisted of ~10 people from a variety of organisations, with the speakers acting as facilitators and a scribe. A summary of these discussions was reported back to the breakout room, which was then captured and reported back to the entire Plastics Colloquium. Details of presentations and discussions are outlined below.

### 5.5.1 Expert input

**Presentations (~10 mins each):**

- Mr Niven Reddy from GroundWorks
- Mr Tinashe Machiridza from Oxfam SA
- Infrastructure Development by private sector by Ms Pippa Gauche from Sasol
- Local Government Waste Infrastructure Development by Mr Balanganani Nengovhela from SALGA
- Mr Hanno Langenhoven from Wild Trust

***Presentation 1 by Mr Niven Reddy from GroundWorks***

GroundWorks is an environmental justice organisation based in Durban. They are part of a few global alliances including Global Alliance for Incineration Alternatives (Gaia) and Break Free from Plastics, of which Mr Reddy is the National co-ordinator.

The presentation highlighted sunlight liquid as an example of what decisions consumers face: the cheaper refill is layered and so difficult to recycle, where the more expensive main bottles (which are recyclable) are more expensive.

The presentation highlighted that refill stations have been successfully piloted globally and in South Africa.

- Mention was made of the Philippines, where Unilever is piloting refill stations.
- Zero Waste Stores are growing across Africa, including South Africa.
- The presentation highlighted that refill stations and the associated Zero Waste Stores provide an alternative to packaging.

The presentation focused in on recycling. Part of the current debate is that recycling can solve the plastic waste issue – however this is misguided, as 9% of plastic that has ever been created has been recycled (from “Recycling is not enough”, a 2018 report by Gaia). As such, recycling cannot control the problem. One needs to look upstream at creating solutions around redesign and reduction. Recycling was recognised by the speaker as important, but so are other solutions, as recycling is not enough.

The speaker introduced waste pickers and small-scale infrastructure support. Contrasting waste pickers working on landfill versus waste pickers integrated into the municipalities through being given a space outside of the landfill site, to sort waste. Highlighted the importance of creating a safe, sanitary and dignified space for the waste pickers to operate in.

The presentation moved on to large scale infrastructure which is being considered. The presenter highlighted that one should not be considering infrastructure to deal with a problem that should not be created in the first place. The presenter does not believe that large scale infrastructure such as incineration, pyrolysis etc. should be utilised, as this solution focuses on the end problem, but one should rather look at upstream solutions

The presentation introduced the concept of a brand audit - an extension of beach cleans up's which identifies brands, expanding as a global initiative, as an entry point to engagement with brands, and allows for accountability

### ***Presentation 2 by Mr Tinashe Machiridza from Oxfam SA***

Oxfam SA is an NGO developing and initiating community development initiatives, waste management and Small, Medium and Micro Enterprise (SMME) Waste Picker groups, and integrating these with the formal waste management sector in Ekurhuleni, other areas of Gauteng Province Metropolitan Municipalities and the Municipality of the City of Cape Town. With a project aim focusing on training and helping small businesses to expand, with an ultimate aim of promoting the meaningful involvement or inclusion of co-operatives and small business in the plastics value chain.

The presenter introduced the concept of building and providing basic equipment needed by small business needed to collect, sort and bail waste to take to recyclers. Partnerships are needed for community development to develop infrastructure to support the Waste Pickers, who are doing the bulk of the work. Infrastructure can be developed to provide waste pickers with basic space so that they can collect more, grow their businesses and take the plastics out of the environment. An example of a partnership between municipality and Oxfam was utilised – the Municipality provides the land and the bulk services and Oxfam then developed the site. Six pilot studies have been carried out. The resulting recognised space provides the ability to then introduce capacity building (business, marketing and the sharing of best practices). Further partnerships regarding brand owners are utilised to support capacity building, as well as, the infrastructure development. Such projects are inclusive, cooperatives (self-run) and sustainable -the collectors are included in the value chain, allowing for a meaningful contribution to a circular economy. The presenter introduced the concept of utilising Climate Funding to finance such initiatives, and so bringing in funding from big international organisations to support recycling

***Presentation 3 by Infrastructure Development by private sector by Ms Pippa Gauche from Sasol***

This presentation covered the South African Initiative to End Plastic Waste Infrastructure Working Group, their mandate and what has been achieved by them so far. The working Group recognises that in order to meet its objectives, input and collaborative approaches need to be met throughout the value chain. Members include producers, Producer Responsibility Organisations (PRO's), brand owners and other interested parties. The Working Group started collaborating in July 2019, agreeing on objectives charter and project workflow. Objectives of the working group include identify ways to best remove waste management from the environment (landfill and environmental leakage) through improvement/development of waste management and recycling infrastructure (role out of plastic waste management). The Working Group has conducted a review, and brain stormed project portfolio, as well as developed a measurement Matrix for members to quantify measured results from projects.

It is recognised that synergy is needed in projects across sectors, the identification of projects that can be scaled up and what needs to be accelerated.

Currently, what is the industry doing in term of plastic waste?

- Collection of recyclables.
- Technology development.
- Clean up campaigns.
- Coast cleans up.
- Litter booms and trash traps.
- Circular economy and integration of reclaimers.
- Redesign of packaging for recycling.
- Education and awareness campaigns.

What are PRO's doing? The presentation provided a summary on the following:

- Petco – development of end use markets, unlocked R1 billion in infrastructure development.
- Polyco:
  - o Packa-ching.
- Polystyrene Association of South Africa – focus on end user projects.
- 46% of recycle plastic are diverted from landfill currently (industry figure), with an agreement to reach 55% moving forward.

The presentation focused in on what South Africa needs regarding the management of plastic waste, as this is a South African problem that is going to need collaboration (across sectors). The concept of South African based solutions was introduced. With consideration not to over burden one specific sector/organisation in the value chain.

The speaker focused in on what infrastructure is needed by South Africa and highlighted that South Africa needs to leverage off what currently exists (waste moves in specific ways to specific places already).

The speaker highlighted that mechanical recycling has limitations and so other technologies need to be considered.

- Separation as source will help support recycling, but further investment is needed along the value chain.
- What other technologies does South Africa wish to pilot and expand on so that we can come to a full solution?

- Extended Producer Responsibility (EPR) does have a role to play, in funding, knowledge, capacity building and empowerment.
- It was recognised that Robust economic solutions are needed.

The following funding vehicles were presented:

- EPR through the Industry Waste Management Plan (IWMP)
- Plastic tariffs
- Municipal budgets
- resources can also be done through knowledge sharing through partnerships

***Presentation 4 by Local Government Waste Infrastructure Development by Mr Balanganani Nengovhela from SALGA***

The presenter introduced what Municipalities are reasonable for in South Africa. Municipalities implement section 25 of the constitution - to help promote a healthy and safe environment. In order to fulfil this constitutional obligation, the municipalities are responsible for the following infrastructure: waste to energy plants, landfill, transfer stations, buy-back centres, and trucks.

The presenter recognised that there is a difference in management and level of quality of management in and across municipalities. Municipalities are funded by national government (conditional and non- conditional), tariffs, property tax. The biggest challenge, related to property tax, in rural municipalities where land belong to traditional leaders - the municipalities are losing income as whom do you charge the property tax to? There are currently good discussions with Treasury on how water pipes/electricity (connector infrastructure are funded by National Government versus waste management (trucks are funded by municipality).

Fiscal and management challenges that are faced by the municipalities include:

- Widening funding gap
- Unfunded mandates
- inadequate transfers
- expenditure inefficiencies

What needs to be done to support infrastructure for recycling, and who should fund?

Challengers include issues around:

- Ownership?
- Collection of recyclables – who is responsible for collection once it is separated at source.
- Campaigns to communicate change by households, as households need to take part in separation at source.
- The collection of municipal waste must then be the responsibility of the municipality.
- Where should infrastructure investments in facilities be?
  - o The urban municipalities have an idea about where facilities should receive investment. But the rural areas need support on research and direction regarding this.
  - o

***Presentation 5 by Mr Hanno Langenhoven from Wild Trust***

This presentation introduced the two contrasting sides of industry and NGO's/ civil society – where both present a mixture of facts and spin, and both contradict the other. There is a need to listen to each other and collaborate on creative solutions.

The presenter acknowledged that there are other big environmental and social issues, but reinforced that today's dialogue is about Plastic. The presenter utilised photograph's of the Umhlanga River, and beaches to highlight that even though beach cleans occur, the issue is persisting, and that in order to address the issue, change needs to occur upstream of the visual environmental problem.

The presenter went on to challenge industry numbers, specificity focusing on the 45.3% of plastic that is reported to be diverted from landfill; and the 65% collection rate for PET of water bottles and drinks bottles. The presenter presented different numbers from industry and 'The State of the Waste' Report, showing a discrepancy in the numbers being reported for recycling. He also highlighted that immaterial to the discrepancy in numbers, even at the lowest margin of error in the numbers, it is still a huge amount of waste entering the environment every year – and that is the issue that needs to be addressed.

The presenter asked if one can recycle our way out of this issue, highlighting that recycling in South Africa is operating below capacity due to a lack of end markets – meaning that increasing recycling capacity will not solve the issue. The presenter highlighted that recycling monopolies in South Africa drives down the price and that there is volatility around unstable and low prices damaging the recycling industry. The presenter highlighted that there is no legislation for packaging.

The presenter put forward the following solutions to create a stable end market and reducing plastic waste:

- Legislate minimum recycling content in packaging.
- Legislate a fair producer responsibility mechanism.
- Decouple the recycling prices from the virgin prices (regulate).
- Regulate the recycle material market.
- Create a public trading platform for recycled materials.
- Declassify recycling processing substances
  - o increased accountability.
- Phase out all non-recyclable plastics
  - o treat non-recoverable plastic as hazardous waste (using the Basil Convention).
- Reduce unnecessary plastic items.

### 5.5.2 Summary of discussions

This commission addressed the issue slightly different to the rest of the breakaway groups. The table discussion aimed at answering the following questions:

- 1) What infrastructure is required to manage plastic waste?
- 2) What is the role of EPR in infrastructure?
- 3) What funding is available?
- 4) Who needs to pay for plastic waste?
- 5) What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)?

Identifying the following high-level answers:

- 1) What is working well on the management of plastic waste linked to the focus area of the specific commission (infrastructure)?

- 2) What are the gaps in the focus area of the area (infrastructure) that are leading to increasing plastic waste generation?
- 3) What are the top 5 challengers in term of infrastructure?
- 4) What support is need for and from everyone throughout the value chain?
- 5) What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)?

All points from each table is captured below, in no particular table order. An overall summary presented back to the rest of the Plastics Colloquium is provided at the end. It is noted that due to confusion, some tables answered the questions, and some the high-level answers. Some tables ran out of time in the discussion.

*Table 1*

**Overall summary from table one into three key points:**

- Lack of investment in infrastructure solutions is a challenge, a next step solution is available to government in the utilisation of industry in the approval of the Waste Management Plans (which are drafted), coupled with the approval of these plans is the release of funding by industry – hence those creating the plastics are providing the funding for solutions, but this is depended on the government approving the plans.
- Land and space is an issue throughout the municipalities. Pieces of land need to be identified by communities and municipalities working together. Then the municipalities need to release the land to allow for infrastructure development by investment by the private sector.
- Lack of service delivery is a challenge but this has also created an opportunity and we need to work together on alternative solutions that will support the municipality.

**What is working well on the management of plastic waste linked to the focus area of the specific commission (infrastructure)?**

- Focus from industry in PRO in investment or piloting solutions that can be scaled:
  - o e.g. PACKA-CHING – mobile buy-back centre (can do four communities in a day) – allows access to a lot of people. There are four operating currently. There are plans to expand based on pilot.
    - Willingness to collaborate is working.
    - Brand packaging can do more by partnering in the pilot space.
- Enterprise development – once something is proved then people come onboard.
- Collection of both recyclables and non-recyclables.
- The private sector is currently working (on waste management initiatives)
- The SA Initiative to End Plastic Waste is starting and working as a dialogue.
  - o The creation of spaces to come together to tackle the waste issue to come together.

**What are the gaps in the focus area of the area (infrastructure) that are leading to increasing plastic waste generation?**

- The government sector is not doing enough – the above is covered by the private sector.
- Gap is the local municipalities – they currently just collect and landfill.
  - o Need capacity building on knowledge on make other options.
- Brand ownerships are not aggressive enough in making collaborations.

- Do not believe the brand owned initiatives are making an impact – they wait for the converted before coming on board.
- Education is an issue – separation at source, what is recyclable what goes to landfill?
  - Municipalities introducing separation at source does not work without education.
- Design and labelling are both current gaps.
- Lack of MERFs and transfer stations, and end of use development (one needs an end use market).
- Lack of bins:
  - In Buffalo City – private sector is putting in recycling bins next to refuse bin – with an education campaign - education linked to infrastructure success.
- Lack of regular service delivery (there may be a collection area, but the municipality does not collect regularly and so the refuse builds up).
- The lack of necessary legal structure (MOU's) to allow for combined working between government and private sector (which would enable infrastructure development).

**What are the top 5 challengers in term of infrastructure?**

- Divided into sector
  - Government
    - Not enough support from government to support infrastructures solution for entrepreneurs.
    - Not enough support from government on service delivery on waste management.
    - Irregularities in the tender process, and red tape.
      - These affects the informal industry significantly.
  - Industry
    - Brands are not aggressive enough.
  - PRO's
    - There is not mandatory support by packaging producers – waste management plans would allow for this.
- Problem identified – strike action leads to bins burning. And bins are used for other things, bins been broken by the municipalities and others.

**What support is need for and from everyone throughout the value chain?**

- Government needs to give others access to infrastructure that is in place but not used.
- Government needs to listen more to civil society – they listen more to industry.
  - Channels of dialogue about infrastructure delivery – so that the infrastructure is what and where the society needs them.
- Government to incentivise collection (like PACKA-CHING), how do you give extra value for an end use – and what infrastructure is needed to support that.

**What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)?**

- Put recycling centres in schools and universities – as an education approach. Reward scheme for kids.
- Lack of investment in infrastructure solutions is a challenge, a next step solution is approval of the Waste Management Plans – which will allow industry to have money to do more with.
- Brand owners to brand with PRO's.
- Land and space is an issue – municipalities' needs to open up land to allow for infrastructure development. Then the infrastructure investment on that land can occur by the private sector.
- Lack of service delivery is a challenge but has also created an opportunity and we need to work on alternative solutions that will support the municipality.



- Shift in design – colour in PET bottles should go away.

*Table 2*

**Overall summary from table on into key points:**

- Need to understand each area and implement simple solutions.
- Localise centres, keep waste in area that it is serviced in.
- Consider solutions and processing from a design perspective, considering end of life, job creation, health and safety.
- End use markets are key.
- Incentives can be used to drive solutions.
- Everyone should participate in the EPR's.
- Local industry needs to subscribe to ERP's/carbon tax. Government needs to protect local industry from imports from companies that are not subject to similar taxes and be transparent of the use of money.

**What is working well on the management of plastic waste linked to the focus area of the specific commission (infrastructure)?**

- There is good collaboration.
- There is increasing awareness.

**What are the gaps in the focus area of the area (infrastructure) that are leading to increasing plastic waste generation?**

- Policy and regulation.
- The availability of land to set up recycling facilities.
- Integrated Waste Management Plans are not signed/approved.
- Though there is increasing awareness, there is a lack of education and awareness.
- Sharing of best practices and guidelines (including development of guidelines in terms of the size of the municipality.
- Municipality infrastructure.

**What are the top 5 challengers in term of infrastructure?**

- Encouraging households to participate in separation at source by proving incentives.
- Buy-back centres and drop off sites.

**What support is need for and from everyone throughout the value chain?**

- Integrated Waste Management Plans (IWMP's) and a Master Plan which aligns the different IWMP's, the national, and municipal waste management plans with targets.
- Industry and Municipal both have a role to play in providing support.

**What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)?**

- Incomplete due to time constraints.

*Table 3*

**What infrastructure is required to manage plastic waste?**

- Informal settlement

- Establish separation at source programme.
- Establish clean Materials Recovery Facility (MRF).
- Municipality takes only 20% to landfill site.
- Simple solutions are needed
  - e.g. Small movable bags (bulk bags in frames) that can be placed on the back of bakkies.
- Localised processing capacities (assuming that there will be separation at source).
- Establish incentives and end user market.
- Formal settlement
  - Separation at source (two bag system).
  - Establish clean MRF.
  - Establish incentives and end user market.

**What is the role of EPR in infrastructure development?**

- To take responsibility of the product life span.
- No free runners, Industry waste management must be in place and approved by National department.
- Government to protect local industry.
- Lack of Collaboration.
- Intellectual property protection.
- There is a need of transparency and reporting.
- Need for leadership and vision.

**What funding is available for management of plastic waste?**

- PECTO model to incentive the EPR.

**Who needs to pay for infrastructure for plastic waste management?**

- Municipalities and outsource operation
- Industries who collect recyclables
- Through creation of new waste beneficiation industries upliftment establish incentives and end user market can occur which will result in an increase in overall income and tax base available

**What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)?**

- incomplete

*Table 4*

**What infrastructure is required to manage plastic waste**

- Focus on post-consumer sorting and separation at source, municipal collection and buy-back centres. Mixed infrastructure model to be applied (approach from SALGA) dependent on size and dynamics of municipalities will require different models for recycling within different municipalities – e.g. urban, rural and small-town models. Use a best practise and replicate the roll out in the short term.
- Cost of waste plastic for sale should be regulated/subsidized to encourage the market to purchase recycle.

- Industry will react to demand and invests in plastic recycling facilities if there is a market and profit is to be made. EPR Scheme should be tiered similar to the carbon tax, to encourage industry to find innovative solution.
- Three different approaches as mentioned above
  - o We need buy-back centres? City of Tshwane example.
  - o Rural areas need sites for aggregation of waste as a start because a lot of rural waste is not collected. There is scope for collection models in rural areas.
- Infrastructure that empowers waste pickers – people want to tell them what they need...ask them what they actually want...e.g. Identification – shelter, places to sell their waste...e.g. Fairtrade plastic.
- Residences, schools and offices must implement recycling at source.

#### **What is the role of the EPR in infrastructure development?**

- Extract funds from one point in the value chain – TBC convertors, brand owners of retailer etc. but not all. Tier the system link carbon tax to encourage industry to get involved and continue innovating for reduced fees driving our objective of zero waste to landfill (e.g. Greenloans created for people trying to get into bricks, plastic roads, corporate support means exemption from % of the EPR fee).
- Policies should support companies that use recycled plastics. EPR funds to be split across all the pillar of waste management however not to be spend on developing recycling (chemical/Mechanical) facilities, private industry will respond to opportunity created by implementing the above.
- Localisation of technologies – collection and sorting and entrepreneurs and waste being used to be sold.

#### **What funding is available?**

- Industry led EPR– funds managed by industry. EPR funding model involving
  - o Municipality.
  - o Entrepreneurship.
  - o Industry.

#### **Who needs to pay for infrastructure for plastic waste management?**

- How industry can support companies that use the recycled plastics.
- Need to create demand for recycling, so we get higher percentages. Demand will be reduced EPR fees for recycled content plastics. Incentivising industry to use recycled plastics.
- Also boils down to the end users – need to create an end user market.

#### *Table 5*

#### **What infrastructure is required to manage plastic waste?**

- Current recyclers have massive volumes stockpiled
  - o The demand for recyclite is low resulting in recyclers are sitting with huge volumes.
  - o Hence support and development of end use markets is important.
- Infrastructure will allow plastic to move from the environment to storage spaces.
- Government has a monopoly on waste collection, why not have private offer this infrastructure investment?
- Definition of infrastructure discussed here: Collection, transport, landfills, buy-back centres, infrastructure supporting end use markets.

**What is the role of EPR in infrastructure?**

- The debate needs to be targeted to what is needed – there needs to be unification of stakeholders in these discussions.
- Agreement that to get the allocation, organisations must be transparent and visible
- Important consideration:
  - o As production is 100 % and process and reuse is ~50%, as important consideration is who funds this gap to get the process and reuse value up to 100%?
  - o EPR must be founded on a weighted regulate, and weighted tax with regulation. With regulation comes investment into environmental infrastructure.
  - o It is important to note that Public Finance Management Act (PFMA) does not allow the ring-fencing of funds, however the funds must be put back into programmes (lobbying is a way of ensuring this), it must be clear and transparent how much goes back, and into what.

**What funding is available?**

- There are funds available within government, stockholders need to familiarise themselves with where these funds are (they are fragmented across government) and how to access them for infrastructure development.

**Who needs to pay for plastic waste?**

- Incomplete due to time constraints.

**What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)?**

- Incomplete due to time constraints.

*Table 6*

**What infrastructure is required to manage plastic waste?**

- Deployment of nets (or catching devices) to rivers and streams to capture plastics.
- Separate bins to encourage separation at source.
- Space to be provided for waste pickers.
- Collection, transport, disposal, value chain systems, space to sort and stockpile recyclables.
- Investment in landfills.

**What is the role of EPR in infrastructure?**

- Subsidise the cost of recyclable plastic, to support end of life development as a responsibility for initial production.
- close the gaps through infrastructure development.

**What funding is available?**

- Government funding is available for the management of plastic waste.
- EPR's have funding.
- Brand owners have funding is available for the management of plastic waste.

**Who needs to pay for plastic waste?**

- Government and EPR's.
- Everybody above the age of 18.

**What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)? What infrastructure is required to manage plastic waste?**

- Incomplete due to time constraints.

*Table 7*

**What infrastructure is required to manage plastic waste?**

Infrastructure is divided into supply and demand:

- Supply
  - o Infrastructure supporting separation at source.
  - o Infrastructure supporting collection.
  - o Buy-back centres.
  - o Fixed price to create a demand, encouraging industries as it becomes a lower risk industry.
- Demand
  - o Once the demand is created, industry will fill the gap. Hence, infrastructure supporting the stable development of end markets is important.
  - o Infrastructure supporting mechanical and chemical recycling is necessary.

**What is the role of EPR in infrastructure?**

- Support the collection of clean plastics – there is a need to close the gap for waste pickers, to provide respect and dignity.
- Investment in buy-back centres like Polyco etc. – which are linked to improving the lives of waste pickers.
- Should not be used for recycling centres.
- The EPR's need to be tiered to drive demand for recyclate and encourage industry to support job creation and dignity for waste pickers.

**What funding is available?**

- Incomplete due to time constraints.

**Who needs to pay for plastic waste?**

- The user must pay. But there must only be one link in the value chain to collect this payment to prevent double taxation. The funds should be managed by industry.

**What do you propose as the next steps to see positive change in the focus area of the specific commission (infrastructure)? What infrastructure is required to manage plastic waste?**

- Fixed prices would help create a demand.

***Summary of Infrastructure Breakout Group***

The following provides the points on the slides utilised to report back to the final session of the Plastics Colloquium:

- High Level Cross Cutting Considerations
  - o There is a need for a full waste value chain consideration when thinking about waste management infrastructure!
  - o Ensure end-use market is viable and stable.

- Localise processing capacity.
- Make land and space available for waste infrastructure!
- There is a need to improve service delivery (Regular and Efficient Service Delivery!)
- Separation at source.
- Improve Integration in Planning
  - Integrated Waste Management Master plan that outlines the long-term vision!
  - Next level detail (Action plan/three feet plan).
  - IWMP Alignment.
  - IndWMP Alignment and Approval.
  - Learn from other successful infrastructure implementation (e.g. – Metros can share success stories).
- Government policy to protect industry from imports (same treatment).
- Regulate EPR to ensure levies are utilized for dealing with the plastic issues!
- EPR to be reported and transparent!
- What infrastructure is required to manage plastic waste?
  - Separation at source Receptacles.
  - Space for waste pickers to operate.
  - Nets to protect aquatic and marine resources.
  - Material Recovery Facilities.
- What is the role of EPR in infrastructure development?
  - EPR Schemes to utilities social responsibility incentives
  - Assist close the gap for waste picker (Provide respect and dignity including health and safety).
  - Subsidize the cost of plastic recycling.
  - Help shape collective vision of the sector.
  - Ensure that there is collaboration.
- What funding is available for management of plastic waste?
  - Funding is available but in fragmented form. Not in one pocket. Need to learn to leverage out...
  - Improve lobbying capacity for funding.
  - EPR Schemes - (e.g. PETCO Model).
  - Government Funding (Grants).
  - Brand Owners (e.g. leverage for infrastructure branding; etc).
- Who needs to pay for infrastructure for plastic waste management?
  - Everybody (industry, municipality, tax base, IWM/ IndWMP Plans projects and Programmes)
  - Through the creation of new waste beneficiation industries, establishing incentives and end-user markets.

ADULTS (> 18) : Our parents are the ones that have messed up (a specific point raised by Youth within this breakout session).

## 5.6 Consumer Education and Awareness

This session was facilitated by Ms Mamogala Musekene from DEFF. Four expert presentations preceded the discussion sessions. A summary of these presentations is outlined below.

### 5.6.1 Expert input

#### **Good Green Deeds Programme by Ms Boitumelo Dlamini from DEFF**

The Good Green Deeds Programme (GGD) sits under Department of Environmental Affairs (DEA) following the mandate of section 24 of the Constitution, which gives the right to every citizen to live in an environment that is not harmful and to be health and wealthy, protecting the environment for the future. DEA has led environmental management and conservation and protection for sustainability (for the sake of national and global perspective). The DEA deals with rural and urban community but there are problems due to the historical backlog that they have to go through.

Currently there is a high waste generation rate coming from economic growth, especially in urban areas and littering is a common problem, as well as illegal dumping.

GGD has the goal of changing attitude and behaviour about waste and make people take responsibility for their waste (for example promoting sorting and best practices). Also, the programme aims at clean-up and rehabilitating areas that have been affected by mismanagement and illegal dumping. The three goals of the programme can then be listed as:

1. Litter free South Africa and no dumping (citizens should be aware of the effects of improper waste management to change behaviours);
2. Waste minimization: encouraging community to produce less waste and that waste is reduced, reused, separated and recycled;
3. Advocating to develop any opportunity that can help tackling the waste problem.

The programme has no limit of audience and aims at reaching everyone (civil society, NGOs, private companies) interested in country to fulfil the need for collaboration. There are several approaches in the GDDP to have an impact; they are based on using policy, infrastructures, multimedia, leadership, partnership, and considering the sustainability of the programme.

The national mascot (Billy Bin), launched by the President last March (2019), is a symbol of the wide scope of the outreach under the GGD. There are different awareness platforms to spread news about clean-ups and other initiatives: media platforms, posters, newsletter, publications and trying to reach schools and their curricula.

Since the programme was launched, there have been several articles and news, and the production of outreach material (on DEA website), and an app. There have been also individual contributions that contributed carrying out specific actions (such as separation and cleanups). The private sector was also involved in several programmes and was very critical to ensure that there is only one strong message out. There have been several programmes involving private sector, including community outreach, school recycling programmes and so on.

The DEA hopes that the programme would educate communities, mobilise politicians and industry, divert waste from landfill, and raise awareness on new opportunities. There was therefore a final appeal to join the programme for future collaboration to obtain results addressing social, environmental and economical results.

**Ms Janine Osborne from PETCO**

PETCO has been involved in several programmes such as the SA Initiative to End Plastic Waste and the SA Plastic Pact by WWF to understand how to use their limited resources capacity to focus on four pillars:

- Consumer education and awareness (what research has been done and how to use it to map the key stakeholder to engage and to create a communication plan).
- Business support and skill development (informal/formal/SMMEs, focus on small activities).
- Clean up activities (towards a future where there is no need for them).
- Support collateral (for all the above, aimed at both industries and consumers to create tangible actions).

The work on consumer education was done analysing the status quo building on existing piece of research, considering that new research is expensive and there is a lack of funding. This was done to map the stakeholders related to plastics in the environment, create clear messages targeted to specific audiences and create a calendar of events across the entire year to know when and where message is passed.

PETCO has done extensive consumer research in 2017 and 2019 that has been used for this background work. The research from PETCO covers all demographics and span over the entire country to understand the attitude towards recycling and waste management. They also did school research to understand what educational initiatives and operations are around. The research in the schools focused on Cape Town, Johannesburg and Durban with three phase approach. Learners were approached with face to face interview and educators with online surveys.

The results showed that PET and paper were the most recycled, followed by cans and cardboard. Learners mostly recycle at home and, when they don't, is mostly because they do not know where and how doing it.

The survey on learners showed that majority thing that recycling is worthwhile and show interest in being involved. Only ¼ do not recycle. The information is accessed from social media (1/3) and more than half got information from churches, that should be involved in the dissemination of information.

The results from the educators show that they want an additional community impact linked to the recycling activities. They also recognise the importance of social media and e-newsletter for outreach about recycling, as well as the role of churches.

PETCO also did research on consumers that are seen as having a role in recycling and waste management stimulating pull throughs. Consumers must be therefore aware to enable a favourable environment for sorting, recycling and diversion from landfill. Ms Osbourne pointed out that this baseline consumer research is open, and results are freely available. This research is based on three target audience divided in 'Living Standard (LS)' categories. Audience 1 was LS1 to LS3 (mostly Gauteng), Audience 2 was LS4 to LS6 (mostly black and coloured population in Gauteng and Cape Town) and Audience 3 was LS7 to LS10 (over 600 respondents through an online panel, age span 18-49 and all ethnic groups covered nationwide).

Audience 1 saw a decrease in recycling between 2017 and 2019. Information are mostly spread through word of mouth and waste pickers and economic benefits are the major drive to recycling. Lack of storage and apathy are major issues and there is high respect to the informal sector.



Audience 2 had disappointing recycling levels but when they understand the importance of waste management, they are more open to it. Apathy is very high and informal sector is very visible and respected. Environmental factors were the main drive for recycling.

Audience 3 had higher recycling behaviour than the other audiences and they understood recycling mostly as reusing. Traditional media as TV and radio are the main channel to convey the recycling message. Environmental factor were the main drivers for recycling, which was seen as a necessity and not a choice. There is antagonism in this group towards the informal sector.

Common learnings include very large need for education, the need to align incentives to economic and environmental benefits according to the audience, the importance of the lack of facility and space as limiting factors to recycling, confusion about the plastic polymers identification code. Plastic bottles and can are still the most recycled items.

The creation of a stakeholder map in the value chain is fundamental and needs input from everyone to be meaningful. Stakeholder categories identified as priority are governance, formal industry, informal sector influencer and beneficiaries and all have to be addressed in the consumer plan.

There are also action for business support and skill development: training and mentorship are key (especially for informal sector, in partnership with municipalities and local government), along with equipment sponsorship, infrastructure support, resources and support document, information sharing through email and workshop.

Clean-up activities are undertaken by a large number of international and national programmes, but currently there is a lack of coordination of these activities. Better coordinated activities could have more impact.

The collateral activities include support for industries and consumers, design for recycling guidelines, technical support and membership workshop, training and mentorship, social media support that are available but need to get to the consumers and businesses.

As a final remark, Ms Osbourne highlighted that the GGD are a good platform with the President support and need to be used more. There is also enough research with a lot of info about target audiences and how to tailor the message, but we need to use the info for an effective campaign. There are many programmes that address waste reduction and recycling, but there is the need to spot them and support them. PRO exist to support and guidance to the industry but there are free riders in the system that are not paying the recycling fee and are benefitting from the system.

GGD is also vague and does not articulate the responsibilities for everyone with details and there is no ownership for the campaigns. There is no comprehensive stakeholder map and there is no organic communication plan. There is no plan that link activities with the GGD.

Top challenges are the presence of citizen that want to recycle but they do not know where, when and how; there are confusing messages about recycling; there are also problems in accessing funding; there is need to access complete the stakeholder mapping, communication plan, and to access the governmental platforms. Activities should also be organised and included in the GGD, for example utilising more extensively the Billy Bin mascot.

The next steps should therefore be the completion of the stakeholder map and communication plan, the drafting of training material, the drafting of a calendar of activities and the collation (improvement) of existing outreach material.

### **Student presentation from ASEZ**

The presentation was co-delivered by two students from the student board 'ASEZ', a voluntary scheme for university students related to the Church of God.

They highlighted the importance of addressing plastic pollution in the ocean giving a series of quotes and figures to contextualise and quantify the problem. They spoke about Earth becoming a 'plastic planet' and that plastic, which has been called 'the best invention of the 20<sup>th</sup> century, after 150 years from its invention is present in the majority of everybody's life. They presented data about how much has been mismanaged (8.3bn tons produced so far, of which only 9% recycled, 12% incinerated, 79% buried). They also spoke about microplastics, which have been found in majority of cooking salts and reported a study that estimates that each consumer consumes 2000 pieces of microplastics every year.

They showed figures of the pro-capita amount of plastic produced in South Africa (0.24kg daily, per 87.6kg year) and presented the long time needed to decompose (~500 years) and stressed the importance of feeding all this knowledge to the population, in particular to township, using the media in the right way. They used the examples of a movie about plastic waste that was banned in China in 2016 (PLASTIC CHINA) as an evidence of the controversy that this topic can create.

African countries have taken action already: Zimbabwe, Cameroon and Kenya banned at various level the import, use, sell of plastics. However, the attitude is not always positive in the population and there is apathy for the short-lived results of clean-ups, also considering that plastic pollution has become the norm in their communities. This creates a gap between motivation and action and education should lead to take action and take responsibilities.

Microplastics enter the food chain through the natural chain in the sea (plankton to fish to humans).

The media (news channels) often do not cover the problem appropriately and sometimes for not involve the public into the remediate actions such as clean-ups. Social corporate responsibilities should be not only for the benefit of the company image, but for the sake of environmental protection. Creating restriction and regulation to focus on people and planet would help shifting this focus from just profit.

Along with companies every person should make an actual effort to solve situation such as the whales stranding with stomach full of plastic or the presence of the Great Pacific Garbage Patch. This should include activities to reduce the flow of material from land through rivers to the ocean. The two students then presented some of the clean-up activities carried out by their association, including a monthly clean of a 5 km transect along the Walkerspruit River that flows into Mozambique. They do it over time for the sake of environment and people and to show that effort is not pointless. They work with Good Green Deeds.

These initiatives have also a social impact (especially on youth) diverting people from criminality through environmental education and introducing them to the SDG of the UN. To achieve these goals, they need support from all levels of administration and government (and other stakeholders such as NPOs and schools). They also propose implementation a point system to measure the results of these actions, following the example of Tanzania.

They also suggested practical ideas to recycle plastic with a couple of solutions that can be realised also in deprived community.

### **Sustainable Seas Trust by Sharne Woods**

The Sustainable Seas Trust (SST) is an organisation that aims at eliminating plastic waste from the seas of Africa through research, education, communication and socio economics development. SST launched with the DEA the African Marine Waste Network (AMWN) in 2016, a hub for African activities linked to the reduction of marine litter and a platform for the development of solutions to problems deriving from the improper waste management in the continent. In 2017 they had the first international conference, and she announced a second international conference on 2020 that would involve any stakeholder active on plastic pollution in the ocean. This is supposed a high-level meeting, with invitation extended to presidents and leaders from across the continent to spread best practice. SST aims at reaching the whole of Africa and all their communications and projects aims at covering all African nations.

There is a specific urgency about education because 60% population is younger than 25, which gives an incredible potential and make young people a key stakeholder. SST is therefore developing an educational resource book, which was defined the 'bible' for plastic in Africa. This book wants to fill the absence of curricula about plastic in education curricula and is developed is being developed in collaboration with educators for all countries in the AMWN (for example in the international workshop held in Port Elizabeth at the same time as the Plastic Colloquium that aims at defining what should be included in curricula). The book will report facts, classification and information across the whole value chain of plastic products. Supplements will then be developed from the book to reach schools, municipalities, corporates and other specific target communities. The book should be completed in the next 2 years with many collaborations (including PETCO).

The involvement of communities follows several steps: school clean-ups (including waste categorization), logging data (following the approach of citizen science) and then the development of the 'Are you on the map', a project that aims at geolocating the position and area of operation of activities related to recycling and reduction of marine litter in Africa. SST also support initiatives as the one of some kids that build a wire fish to use as a bin to divide materials.

SST is also included in other projects such as the African Youth Waste Network (empowering young people to be the leaders), and the African Waste Academy with online resources and direct training of teachers - this is linked to the resources book.

In order to do outreach correctly, SST is also putting its effort to map stakeholders and develop different messages to outreach different audiences/demographic groups. This includes the use of social media, considering the social network mostly used are platform where people can access info, video and instruction to learn the 'know how' about several topics. Ms Woods stressed then the importance of working together with media.

### **5.6.2 Summary of discussions**

The answers to the five questions from the different tables are combined below.

#### **What is working well on the management of plastic waste linked to Consumer education and awareness?**

- Cooperatives are working well in using word of mouth both Coastal and Inland Areas.
- The use of ICT/Social Media.

- Schools Recycling Programmes.
- Information and the collective platforms.
- Using learners as stewards in communication.
- PET Petco working well setting others.
- EPR is working.
- Youth activism.
- South African Vinyls Association (SAVA) recycling PVC which is a good intervention.
- The incentives offered to recyclers by PROs.
- Supermarket joining in using recyclable plastics.
- Good Green deeds campaign.
- RECYCLING Education/ workshops PETCO.
- Social media awareness, radio interviews.
- Waste pickers are making a valuable contribution.
- Waste separation at source undertaken by some Municipalities.
- Stakeholder engagement such as the Plastic Colloquium, working groups pulling together various stakeholders to engage in ways to solve the plastic waste problem.
- Research that is comprehensive in understanding opinions and perceptions from various LSMs.
- Education resource book (SST) very useful and informative.
- Success story of PETCO, important for items to be collected.
- polymer code is working well compared to the past, filling up the gaps on filing awareness on what do the codes mean.
- Can produce PE from sugar as example, idea of producing conventional plastics using alternative materials.
- Alternatives that can be found, not enough dissemination of detail.
- There is a movement that started, we need to build a momentum on this, the seed is planted in terms of waste management but has to be applied on a larger scale.
- Notion of road show, with representatives from different sectors (e.g. glass, plastic, metal) and educate people about recycling, reuse, etc., piggy-back on the Green Good Deed Programme, already credited by government (president etc...).
- Existing curb side collection programmes and how it did spread knowledge about recycling, however only located to small localities (example of Cape Town, Durban).
- Beach clean-up programmes and dedicated cleaning events.
- Next step take beach cleans to the next level and ask/educate people what can be recycled etc..., ground for collaboration and no single isolated actions.
- 'Are you on the map' programme answers that issue with global overview of actions and gives opportunities coordination.

**What are the gaps in Consumer education and awareness that are leading to increasing plastics waste generation?**

- Scale of Communication.
- Consumer Awareness around the risen number in plastics generation.
- Misunderstanding of what the sewerage system is for.
- Community Education.
- Storm water knowledge.
- Individual accountability.
- Breaking the stigma around the "it is not my job phenomenon".
- Comprehensive communication plan.
- Vertical identification of correct platforms.

- Social media awareness.
- Substantiation for correct foundation for GGD.
- Waste management clarity and better accountability.
- Lack of service delivery at municipal level. Not all municipalities have IWMPs.
- Implementation of IWMPs.
- Lack of accountability in our municipalities.
- Infrastructure.
- Dissemination of education.
- Active departments and visible official/ politicians.
- Incentives not offered.
- Media not well informing people.
- There is not enough education to consumers regarding classifying plastic.
- There is too much strain placed on the consumer, whereas the producers are held less accountable.
- Many people still do not know anything about recycling.
- Consumers have insufficient knowledge about the effects of their behaviour on the environment.
- The labelling on products cannot be easily understood by consumers i.e. biodegradable etc.
- To transfer awareness to behaviour change- to be more practical.
- Producers to take accountability in management of waste. Products must have clear value management processes.
- Once consumer separates, there is a need for intervention for removal of recycled material. There is a need for directive on how to manage removal of recycled material.
- Polystyrene problem is major as it is untraceable. Producers of polystyrene cannot be traced, and they should also come up with a clear value chain on how to recycle it.
- Clear and transparency on plastic levy to encourage environmental initiatives.
- All isolated actions for need for collaborative coordinated action, effort from are you on the map (by SST)
- People craving hubs of information on any plastic related information, especially what kind be recycled, recycling spots.
- Widgets available for spotting recycling points etc. source from WWF.
- Need to be simpler, SST spent an extended period of time sourcing all the collection/recycling spots and mapping them on the map website as well as the polymer codes.
- Potential for this to be extended for the rest of Africa.
- Breakdown between drop off sites, collecting points and recycling, simple format with simple language. However, needs to be updated regularly and could be an issue. Know about local knowledge and need to be current.
- Example of the paper industry taken, alternative to recycling, should reduce or reuse be the main focus.
- Not one access point, too many silos.
- Are we speaking the same language, clear definition of terminology, need for standardized terminology, vision for SST to fill these gaps and proposed clear definition and terminology to government etc.?
- Understanding of the polymer code, need for clearer national campaigns? Example of billboards on motorways, gap in excess of being exposed to awareness campaigns.
- Need for a discussion of what could be the alternatives uses of plastic items.
- Gap in communication: people do not understand value of not littering and not wasting, need for them to understand value of recycling, not understanding about individual roles in reducing plastic marine litter.

- In some rural towns, problems with mobility, difficult for transport of plastic items that will dictate behaviour on waste management. Highlight lack of infrastructure in rural areas with expensive dedicated collection services.
- No understanding on why they should care about plastic pollution and why they should care about healthy oceans. Relativize between other issues (e.g. safety) (Put into context) and marine plastic litter/waste management.
- Not one stop in shops to find information. SST is creating a website for all resources, e.g. mum – access to education packs – educate children. Same could be applied for learners etc.
- Dedicated workshops for repair/upcycling of materials, example given of the Netherlands with concrete education workshops on how to reuse, upcycle plastic waste items.

**What are the top 5 challenges in terms of Consumer Education and awareness?**

- Inconsistent and conflicting information.
- Communication barrier.
- Attitude.
- Lack of consequences.
- Lack of rewards system.
- Different languages.
- Funding.
- Logistic challenges facing rural recycling.
- Weak network.
- EPR is voluntary and can therefore not be imposed on the producers.
- The country is lacking the infrastructure to process plastics (e.g. MRF's).
- There is no market to receive the plastics in many areas therefore creating a circular economy becomes impossible.
- Misleading claims about the environmental benefits of products (green washing) by producers.
- There is not enough education and awareness drives within communities on why they need to keep the environment clean.
- Funding.
- Lack of technology.
- Free riders to belong to an organisation. Free riders to pay a higher carbon tax.
- Non-participation of PROs to pay a higher carbonate tax.
- Demographics.
- Lack of systems and infrastructure.
- Compliance.
- Lack of visibility and lack of urgency.
- Access for facilities, issue when mobility issues, awareness of location of the facilities. Has to be convenient of access and ease of use.
- People do not where to go to get the resources.
- Problems with collecting points capacities, example of overflowing collecting points/bins.
- Need for a single, simple collecting site for flexibility of use. Need for appropriate infrastructure for facilities access.
- Municipalities should provide convenience.
- Lack of accepted terminology, lack of awareness of clear simple definitions to inform behaviour and consumer choice.

**What support is needed for and from everyone in the value chain?**

- Assist with funding for cooperatives and SMME's education, awareness, workshops and stakeholder engagements.
- Facilitation of partnerships between industry and civil society.
- Facilitation of coherent messaging from Government, Business, NGO's and civil society.
- Stronger leadership.
- Better informed guidelines that are evenly applied and explained from national government to regional government to local government.
- Free riders need to start paying.
- Support from government.
- Blame placed on consumers. Producers also need to take the blame.
- Government needs support in public buying in Green deeds project.
- Local government needs to get more involved in the projects set by the national government.
- Lack of funding for research.
- Research, Understanding behaviour.
- Resources (e.g. the provision of plastic bags for clean- ups).
- Recognition of civil society as they are the people on the ground doing the work (e. community clean- ups).
- Consequences management (the enforcement of by-laws) for illegal dumping.
- Create a market for recyclables (e.g. some companies are closing down therefore collectors have nowhere to take their plastic).
- Capacity and resources are required to identify the gaps that exist.
- Need for municipalities to offer convenience, big visual aids, communication, constant.
- Frequency and reach as well as location of the awareness materials.
- Retailers should be targeted.
- Legislation around packaging design and material use.
- Creation of the urgency of action.
- Be influences in what people should do, has to be championed by leaders.
- Being examples to influence a bigger reach, be role models.
- Awareness day or specific days "e.g. recycling day".
- Research needs funding, research more specialised on waste management, find solutions to reduce plastic waste management.

**What do you propose as the next steps to see positive change in consumer education and awareness?**

- Cross functional regular planning meetings between industry, civil society and Government.
- Facilitation of one programme for education and awareness for Government, industry and civil society.
- Use of technology/4<sup>th</sup> Industrial Revolution.
- Use of Mobile networks messaging for consumers.
- Stronger compliance.
- Enforcement.
- Communication plan input, support and finalisation.
- Visibility.
- Municipal support.
- Free riders to belong to an organisation. Free riders to pay a higher carbon tax.
- Non-participation of PROs to pay a higher carbonate tax.

- EPR must be made mandatory and not voluntary to ensure that all producers are taking responsibility.
- Legislation needs to take a direction that forces producers to build infrastructure (e.g. processing plants).
- Municipalities should be encouraged to work with the local community through strengthened education and awareness and local reclaimers (e.g. providing them with resources such as trolleys, personal protective clothing etc.).
- Awareness?
- More collaboration on the issue for consumer awareness, which is a one stop shop for resources, could be integrated green good deed programmes.
- Education plastic book (SST) could also be used as an effective learning tool.
- SST map could be more interactive for easy updates and additions, already the case with admin doing pre-checks before addition.
- Specific focus maps, potential for focusing on smaller areas to see local involvement.
- Dynamic format that everyone could update, could be a calendar or simpler format to inform individuals or groups about events e.g. beach cleans, workshops etc...
- More visual education/awareness.
- Need for more scientific information, scientific based evidence.

***Next three priority steps:***

- Government to take the lead in the recycling challenge and fostering partnership with cooperatives.
- Adequate Funding for scale communication on all platforms.
- Communication should be based on IST systems so that we reach the massive group (social network ,TV).
- Minister of DEFF to engage with Minister of DBE to influence curriculum from early grades. This should be included in the Life Orientation which already exist. Minister to also engage with Minister responsible for GCIS for education & awareness for general public.
- Industry to work together with government (through Consumer Goods Council) to ensure that producers produce products that have clear guidelines/regulations for recycling.
- Every plastic sub-strait must have value chain created to ensure that every plastic type has value in order to be pulled out of the system.



## 6. Closing plenary

At the end of the working groups, the facilitators of each group reported the results of the discussions to the general group. Each group were asked to identify three priorities. The following was reported by the facilitators.

### 6.1 Product standards and certification

- There is the need to involve more people in the process.
- There is the need to address the design to increase recyclability, knowing what materials are recyclable.
- Better communication on recyclability (labelling).
- It should be mandatory (for manufacturers, distributors, retailers, especially on a small scale) to join a regulatory body (people they must know where to go if standards are not met).
- Need to keep talking.

### 6.2 Product design, development and innovation

- Collaboration around the value chain (there is good collaboration but can be better).
- We have to look at individuals to gain momentum and create action, rather than at community level.
- Support for regulation and guidelines to increase recyclable content in the packaging to support circularity.
- Control of recyclables import: if they import recycled material at a very cheap price they are impairing ability of recycling in country and recovery material locally.

### 6.3 Integration of the informal waste economy

Lot of discussion as in the other groups. The context for the discussion is that the existing situation has to be taken into account and people must recognise that the recyclables are collected from separation outside the source (90% of post-consumer recyclable coming from informal sector, as estimated by CSIR). However, this is based on unpaid labour and this situation has to change.

There is the need of:

- Ensuring implementation of waste pickers guidelines as started by DEA and DST: make sure that all stakeholders are on a committee to develop guidelines, select pilot sites with the approval of municipalities, indicate priorities and work on policies to support and regulate the price of recycled materials compared to virgin material to boost the sector;
- Collaboration with stakeholder: cross collaboration of all areas to sustain collaboration, collective voice (organisation of speakers for informal sector);
- Infrastructure: the provision of infrastructure (storage, transportation) to increase efficiency – infrastructure not to individuals, but to collective forms of infrastructure.
- Any system implemented shall take into account the justice deserved by the people working and currently unpaid for their time, effort and strength.
- Separation at source is needed.

#### 6.4 Biodegradable and compostable plastics

- Key headline is that there is a significant lack of knowledge and understanding about definitions, people do not know what these plastics are and what they should be called.
- Consumer are then misled (they hear 'bio' and they think it is a good thing).
- The current system has significant limitations in collection and processing infrastructure.
- Certification is limited and standardised logos are struggling.
- There is lack of transparency on what is in the product and what is left behind when they degrade.
- There is also the problem that the use of this terminology can lead to an increase in littering (people do not when throwing things away because they think they will disappear) – the consumer behaviour needs to be informed correctly.
- There is need for significant research in this area (what infrastructures are available? What actually degrades in SA landscape (degradability test often done in Europe or North America environments)
- Guidelines should be in place to ensure the responsible handling for these materials.
- EPR for these products might be useful because at the moment there is no accountability and all procedures are developed ad-hoc.
- It has to be noted that composters sometimes want to be paid instead of paying for the material. This is a different system than recycling (no value attached to the material, maybe shall be linked more to waste stream)
- Fit for purpose applications should also be found: can we use these materials in agriculture where the loop can be closed rather than in urban setting?

#### 6.5 Infrastructure

- Infrastructure was considered key to development of the country. The work of the group looked at national interest rather than personal and/or corporate profit.
- Infrastructure is affected by land availability is still a problem (for landfills for examples, especially in rural communities). SALGA input in the conversation was useful because they have data and plans for the future, but they need help to reach those goals.
- Separation at sources: much more needs to be done and everyone is responsible (industry, municipalities and consumers have to play a part).
- Scaling up might need policy guidance.
- Funding is available but is fragmented. There is not speaking to streamline the money to reach the goal for the country.
- The speaker reported the comment of a student that said that parents' generation has created the problem and that they have therefore pay for it.

#### 6.6 Consumer Education & Awareness

- There were great EPR initiatives that are working and it was recognised by the group.
- NGOs and students are doing very useful things.
- Social media are not used much, and more work is needed.
- There are free-riders (producers) on the system that are making profit on products but not doing much to pay for the resultant waste when it comes to managing products at the end of life.
- There are problems with municipalities.

- The commission felt that Government should strengthen the policy and role of producers and support the cooperatives that are already doing good work in consumer education.
- Partnership should also be supported, through events like the Colloquium.
- The three points to take forward:
  - Work on education with department of basic education for integrate the topic of waste and plastic in the curricula as part of the life orientating subjects and to strengthen education on all platforms;
  - The government should foster partnership since civil society is already doing consumer education on the ground, but they need support (resources to go to a higher layer)
  - Media platforms should be strengthened and through the Colloquium there has already been a presence of the plastic topic on the media, but this needs to be an ongoing effort on a regular basis.

## 7. Closing remarks by the Minister

Ministry Creecy was invited to close the Colloquium and give indication for the way forward. She complemented the attendees for the work that had been done in the two days, appreciating the work and defining it as a productive experience. She then said that we are close to the definition of the masterplan that she had spoken about. The masterplan is vast and target households and consumers that need education, awareness, and active involvement in the circular economy. A central point in the masterplan is the connection network in which the municipalities have a significant role to play. The input from SALGA during the Colloquium was useful to understand what to do from the DEA perspective to bring municipalities together to enhance household collection and provide them with facilities for recovery, storage, collection and recycling.

Up the value chain, the Ministry spoke about processing and recycling. There is need to understand more the value chain, how to design to recycle and reuse; how to ensure that tax on products are collected, stored, and reused in different type of waste; and how to be sure that there is genuine creation of new products. This means that there is more work to do for product development, standard, authentication, and marketing.

The informal collectors were highlighted in their importance during the colloquium. These people have to be formalised and recognised in order to increase their production.

The standards for the new products and for new material such as bioplastics were also mentioned. There is the need for more clarification and research to implement an appropriate regulatory system.

The Ministry stated that the plan must have a target with timeframes, actors and specific goals. The report of the Colloquium will therefore aim at identifying targets and timeframes. The committee that prepared the Colloquium must stay in place after showing that they can involve stakeholders and deliver a quality product. The working groups will continue, and participation will be open to people invited to the Colloquium. Every three months there will be a report of the rollout of the masterplan and in one year time there will be another meeting to check progresses and account for what has been done.

The Minister thanked PlasticSA, the Consumer Goods Council, SAWP, DEFF and Mr Modise for the work done. She also thanked all attendees for the work done, which was not taken for granted and she hoped that it was hopeful for everybody.