

International Conference STEMs the Tide of Marine Litter in South Africa

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Port Elizabeth - The Commonwealth Litter Programme (CLiP) Innovation Conference: 'STEM the Tide of Plastic Waste,' coordinated with Sustainable Seas Trust was held in Cape Town on the 5th of December.

The conference was an interactive two-day event showcasing Science, Technology, Engineering and Maths (STEM) solutions to tackle the problem of plastic waste in South Africa.

Africa is the second most polluted continent after Asia and set to overtake it if there is no change. To effect this change, the value of waste as a resource needs to be recognised, and this highlights the importance of innovation and new ideas developed through STEM.

"Without a scientific basis for these marine litter discussions, I think those who want to make a difference are going to be chasing ghosts. They are going to be running after perceptions," says University of Cape Town Professor Dr Ing Harro von Blottnitz. "You need to have the numbers; you need to understand what works. Even for our policy makers and economic space, we need to have STEM."

Plastics and waste are complex issues, crossing private, public, academia and non-profit sectors and therefore collaboration is key to making progress. The conference brought together researchers, educators, government, industry, communicators, entrepreneurs among others to share their experiences and identify possible partnerships.

"The green economy is a team sport. This is not a space where we need solo heroes. We need people to come together as a collective. The situation is becoming more and more urgent over time, so we can't afford to be isolating ourselves," says Toma Now Founder and CEO Dr Jaishela Rajput.

"What I'm really excited about is the fact that this conference includes entrepreneurs. So, we have a chance to be able to hear the voice of up and coming entrepreneurs who have solutions to problems," Rajput continued.

Green Corridors' Sifiso Mngoma says, "In this conference we were gathered because of people who are taking initiatives and who have working solutions already. We were gathered to see what more we can achieve by collaborating together."

The panel discussions highlighted several problems around plastic waste and marine litter in South Africa. The clear message from the floor was that no one wants plastic in the environment, but that the responsibility must be spread across the entire value chain, from polymer producers to converters all the way down to consumers. This would lead to the implementation of a full circular economy that would value new ideas and products.

The UK-funded conference demonstrated that collaboration to stem the tide of marine litter is needed across countries and continents.

"Different countries have different perspectives and collaboration allows for engagement, discussion and better understanding," says Sustainable Seas Trust (SST) researcher Toshka Barnardo. "The litter problem is a global one and we need to work together to solve the problem. Working on that scale creates more awareness and has more of an impact."

Other points raised in group discussions included:

Waste management in South Africa is not sufficient and sometimes very difficult, for example in rural areas where people are live far away from each other and economic resources are limited. There should be an effort to upgrade the collection around the nation.

Recycling efforts are currently very low and recycling is not the only way to tackle the problem. For the future, the focus seems to be shifting to new designs of products; using materials that are fit for purpose (which would reduce multi-layering); and the education of consumers to reducing and reusing. Alternatives to plastic must also be carefully explored. The terms bioplastics and biodegradable plastics are confusing and sometimes seen as a 'green wash' by industries. They are not necessarily bad, more research into their use and long-term impact is needed.

Awareness has a central role in solving the problems of plastic pollution, by leading towards a behavioural change.

"In 2017 the plastics issue became mainstream. We are at the wave of change," says Sustainable Seas Trust CEO Dr Tony Ribbink. "We are in the early days. There is the emotion, concept and misperceptions. We need to generate and share knowledge. We need to educate the nations. There is a gap in tertiary teaching of plastics. We need to ensure that what we put out there is reliable and trustworthy."

"If Africa is threatening to become the worst polluted continent, then the world should be investing in Africa," Ribbink stated.

The winners of the Stamp Out Marine Plastic Pollution (STOMP) Awards were also announced at the CLIP Innovation Conference.

The STOMP Awards recognised and rewarded individuals, civil society organizations, interest groups and youth that are taking action and making an impact on the reduction of marine plastic pollution in South Africa.

From the 63 innovative entries, five winners were selected in five categories: Technology or Technical Design, Product, Adult Inspire through Creativity and Youth Inspire through Creativity, and Special Recognition for Action.

The Technology or Technical Design Award went to The Mermaid Tear Catcher, submitted by Clare Swithenbank-Bowman from KwaZulu-Natal. A recycled plastic "frisbee" is essentially used to sieve out nurdles and other small plastics from the sand and facilitates people getting involved in citizen science projects.

The Product Award went to Patch Bamboo Plasters submitted by Dr Milliea Anis. Crafted from 100% organic bamboo fibre and infused with activated charcoal, aloe vera and coconut oil, PATCH bandages offer an environmentally friendly alternative to the common adhesive plaster.

Port Elizabeth art student Luke Rudman's "The 12 Plastic Monsters", a performance art work that uses plastic waste to convey the horror of plastic pollution, won the Adult Inspire through Creativity Category.

The Youth Inspire through Creativity was won by The Oceano Reddentes NPC (non-profit company) submitted by fourteen-year-old Jade Bothma from the Western Cape, who started the non-profit that is "Saving the sea one piece of plastic at a time" through education, awareness, and research."

The Special Recognition Award for Action went to Singakwenza, submitted by Julie Hay from KwaZulu-Natal. Singakwenza, which means 'we can do it' in isiZulu, provides low cost, high impact health and early education through empowerment programmes to economically disadvantaged communities, particularly in rural areas of KwaZulu-Natal.

Marine litter is found in all the oceans of the world. It is found not only in densely populated parts but also in remote areas, far from obvious sources and human contact. Up to 90% of marine litter is made up of plastics, originating from both land and sea-based sources. This makes plastic pollution one of the most widespread problems facing our oceans today.

"Although the dialogue around marine litter has been going on for some time, this conference put STEM at the forefront of developing innovative solutions for marine litter," says CLiP Marine Litter Scientist Bryony Meakins.

The conference is also part of the Commonwealth Litter Programme (CLiP) which works with countries across the Commonwealth to encompass a variety of geographic, economic and environmental differences and enable a wide breadth of marine litter issues to be addressed and ideas shared.

CLiP Marine Litter Scientist Dr Umberto Binetti says, "We are targeting various countries with very different characteristics, so we can collect data from different parts of the world and understand how the marine litter issues change in accordance with the countries social and economic situations. This gives them the information they need to develop their own, localised responses to this common challenge."

The CLiP Innovation Conference was funded by the UK Government and organised by the UK's Centre for Environment, Fisheries and Aquaculture Science (Cefas) and South Africa's Sustainable Seas Trust (SST).

The discussions and solutions presented at the CLiP Innovation Conference will be further explored at the Second International African Marine Waste Network conference to be held in Port Elizabeth from 20-24 April 2020.

"The conference was a great success. We had some really engaging discussions in the panels and World Café sessions. There was a real sense of community between government, between scientists and researchers, between entrepreneurs and NGO's and there was acknowledgement that marine litter needs to be tackled together," says Meakins.

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