

SEA of Solutions 2019

11-14 November 2019

Partnership week
for marine plastic
pollution prevention

Report

sos2019.sea-circular.org





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About SEA circular



SEA of Solutions 2019 is the first annual partnership week convened by [SEA circular](#).

[SEA circular](#) is an initiative from the UN Environment Programme and the Coordinating Body on the Seas of East Asia (COBSEA) to inspire market-based solutions and encourage enabling policies to solve marine plastic pollution at source.

Plastic waste is choking our rivers and seas, threatening ecosystems and livelihoods in South East Asia.

Striving for cleaner seas, less plastic wasted and a more circular economy requires fundamental changes throughout the plastic value chain.

It is estimated that just four Asian countries – China, Indonesia, the Philippines and Vietnam – account for about half the plastic waste that flows from land into the ocean. This is due to rapid growth in plastic production, and inadequate management of solid waste – resulting in overflowing landfill sites and plastic leakage.

At the third United Nations Environment Assembly (UNEA-3) in December 2017, Heads of State and Ministers of the Environment from over 140 countries declared that:

[“Any threat to our environment is a threat to our health, our society, our ecosystems, our economy, our security, our well-being and our very survival.”](#)

Plastic pollution has wide-ranging environmental, social and economic impacts, damaging marine ecosystems and biodiversity and ultimately impacting human health.

[SEA circular](#) is working in six countries in South East Asia: Cambodia, Indonesia, Malaysia, the Philippines, Thailand and Vietnam, from 2019-2023. The project is supported by the Government of Sweden.

The focus is on several points along the plastic value chain. Interventions are designed and implemented with an understanding of land-sea interactions, and towards a circular economy. [SEA circular](#) works with national and provincial governments, private sector corporations, civil society groups and NGOs – and many other stakeholders – to support good governance and policy making, and promote circular economy principles.

[SEA circular](#) focusses interventions on supporting market-based solutions, enhancing the science-basis for decision making, generating outreach to support awareness and behaviour change, and promoting a regional approach through collaboration and networking.

[SEA circular](#) goals:

- Increase in the variety of non-plastic and recycled plastic packaging
- Elimination of single use plastics from selected value chains
- Escalation in recycling rates and plastic segregation at source
- Strengthened policy and fiscal incentives to reduce virgin plastic use
- Growth in consumer demand for plastic pollution reduction

The overall aim is for less plastic wasted, with reduced input to, and impact on, the marine environment and its dependent people in South East Asia.

[Join us to solve plastic pollution at source](#)

www.sea-circular.org

Overview



SEA of Solutions 2019 was the first annual partnership week convened by the SEA circular initiative. SEA of Solutions 2019 brought together governments, business leaders, scientists, UN agencies and community groups, to dialogue on solutions for marine plastic pollution.

Over 500 registered participants from more than 40 countries, 115 speakers in 20 sessions and 25 exhibition booths, all highlighted solutions to prevent marine plastic pollution.

The first annual SEA of Solutions event was successful in generating dialogue and promoting opportunities for future collaboration and partnerships. More than 300 organizations, including well over 100 companies, NGOs, governmental bodies, academic, and youth groups sent representatives from across the region to this event, fostering partnerships in the region to combat the transboundary problem of plastic pollution – under the uniting mantra of ‘Together, less plastic wasted’.

Day 1 – Solutions with science

Setting the stage for SEA of Solutions 2019, Day 1: Solutions with science, considered how far the science has taken us – what do we know and what have we achieved? – and what we still need the science to tell us in order to successfully tackle marine plastic pollution. The day primarily consisted of discussions rooted in scientific facts and social science researches, which set the tone for the event as a fact-based and solution-driven four days.

Day 2 – Plasticity Bangkok @ SEA of Solutions – Solutions through innovation and business

Day 2 of SEA of Solutions – Solutions through innovation and business – featured Plasticity – the well-established, business-led and solutions focused plastic circular economy forum. Plasticity was invited to be part of SEA of Solutions 2019, to showcase informed eco-optimism, exciting new circular economic thinking and technological advances. Plasticity Bangkok @SEA of Solutions provided insights into the reality of the plastic value chains in Asia as well as into business-based solutions to make plastic use circular and sustainable. Recognising the societal and environmental damage caused by plastic pollution, business representatives shared their challenges, their commitments and their solutions to tackle plastic waste upstream to prevent it reaching waterways.

Day 3 – Local solutions to plastic pollution

Day 3 – Local solutions to plastic pollution – focussed on solutions from communities and the local level, focussing on policies, technologies, research, innovation, actions and initiatives from national and local government, businesses, communities and youth. The day highlighted how communication, education, raising public awareness, and collaboration with civil society groups are key drivers for behavioural change. Local governments can engage communities and consumers in plastic pollution action. Intermunicipal cooperation on waste management is an effective solution, by creating economies of scale and reducing costs beyond major urban areas.

Day 4 – Forum on plastic pollution solutions

The finale of SEA of Solutions 2019 was the Forum for plastic pollution solutions. The Forum saw national government representatives, CEOs, youth and community leaders brought together for four discussion sessions covering key aspects of the plastic pollution conundrum: Trade in plastic waste, packaging and finance.

Pledges for ‘less plastic wasted’

The entire event culminated in a series of inspiring pledges, launching further collaboration and action, towards less plastic wasted.

Governments pledged to promote ‘international/regional cooperation’, corporations pledged to ‘use more recycled and recyclable materials in packaging’, NGOs and CSOs pledged to ‘advocate and educate for responsible consumption’ whilst working for ‘responsible processing and reuse’.

Universities pledged to promote ‘research and innovations in plastic reduction, reuse and recycling’ whilst international organizations pledged to work to ‘close the loop on plastic waste through circular economy approaches’.

Solutions and recommendations

Solutions for ‘less plastic wasted’ were presented through four days of intensive and inspiring dialogue and demonstrated in the interactive exhibition booths.

The following overarching solutions and recommendations were emergent at SEA of Solutions 2019,

- Do recycling right; improve quality and safety of recycled materials; bring in more legitimate businesses and acknowledge the role of the informal sector. Recycling is part of upcycling / closing the loop.
- Develop a locally viable solution to specific plastic types/items; no one-size-fits-all.
- Technology innovation is part of the solution, alongside education and strategic partnerships. Innovation in alternatives requires a simultaneous shift in waste collection and processing systems.
- Share the sense of urgency for an ecosystem of solutions, where large corporations and start-ups thrive. Call for industry-to-industry dialogue.
- Reconcile sustainability and marketability through scalable, cost-effective solutions. The market is ready, consumers are maturing, the financing is available.

Numbers at a glance

Delegates	527
Thailand	254
Rest of South-East Asia	88
Rest of Asia-Pacific	67
Rest of the World	88
No info**	30

Speakers	115
Sessions	20

Countries	40
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Delegates from sectors

Business	174
Government, UN	115
CSOs and NGOs	60
Academia	76
Others*	26
No info**	76

South-East Asia delegates	342
Thailand	254
Philippines	18
Indonesia	18
Singapore	27
Malaysia	17
Cambodia	6
Myanmar	1
Laos	1

Rest of Asia-Pacific delegates breakdown

Australia	16
China	13
Japan	18
Korea	4
India	13
Nepal	2
Papua New Guinea	1

* IUCN,GIZ, Alliances, Independent Consultants

** Some walk-in delegates registered at the UNCC chose not to give info



SEA of Solutions Impact and outreach



SEA of Solutions 2019 was very active both online and offline in marketing, communicating and outreach for the event. The impact was substantial in terms of outreach and successful participation, as well as dissemination of key messages, awareness raising and knowledge management.

Registration

Registration was promoted through social media channels and online. A registration database was developed in the SEA circular portal, combining a registration form and a pre-event survey. A total of 600 'registrants' signed up – indicating substantial interest and a successful outreach initiative.

Pre-event survey

A pre-event survey was conducted of registrants to develop a baseline of the level of understanding and response to the challenge of marine plastic pollution, as well as expectations and what participants hoped to gain. 438 respondents completed the survey.

Understanding and response level:

The survey indicated that 81% of respondents felt that the current level of understanding and response to the challenge is at the level of 'Awareness' or 'Aspiration'. Zero respondents thought that the current level of understanding and response to the challenge was at the level of 'Scaling up' or 'Impact' – indicating there is progress needed and a clear path for scaling up.

Expectations:

The majority – 95% of participants – indicated that their expectations of SEA of Solutions 2019 would increase their knowledge and enable them to form partnerships. 69% hoped to find out what the latest science tells us about the marine plastic pollution solutions. 90% aimed to understand more about how a more circular economy can prevent marine plastic pollution, whilst 74% attended to seek solutions in business, innovation and finance to the challenges of marine plastic pollution in South East Asia. 88% sought to identify how best to get communities involved in the transformation to a more circular economy, with less plastic waste and leakage.



THANK YOU FOR JOINING
SEA of Solutions 2019

'Together, less plastic wasted'



What a week!

Over 500 participants, 115 speakers, 30 sessions, 25 exhibition booths - and four days full of solutions.

Your feedback please

We want your feedback! What did we do well? How can we improve for SEA of Solutions 2020?

MORE

OVER TO YOU



All the action

Re-visit all the sessions, statements and solutions through the interactive daily reports from each day of SEA of Solutions 2019.

Multimedia

Check out all the videos and photos from the event. There's a SEA of Solutions film series on YouTube and a thousand pictures on Flickr!

DAILY REPORTS

FILMS & PHOTOS

Email marketing / e-news

A web-linked event marketing drive was initiated, through email newsletters and social media (UNEP Asia-Pacific Facebook) of which four were issued ahead of the event, for promotion, awareness-raising and information dissemination, and one 'post event' email update for all delegates to support knowledge management. The mail newsletters contained links to the SEA of Solutions 2019 web platform registration form and social media – to drive users. The reach of the email newsletters was substantial, with an average of 55% open rate. In total the five email newsletters issues were viewed/read 7,907 times. An email database was generated with a total of over 600 contacts – forming a large network of stakeholders on plastic pollution prevention – which will be utilized and built on, for forthcoming regular SEA circular communications.

SEA of Solutions 2019 was also promoted via www.plasticity.global, with email direct marketing (EDM) to Plasticity's 5000 alumni database and via social channels – Plasticity Facebook, LinkedIn and Twitter. Plasticity sent five EDMs before the event and one post-event, with a total of 6594 page views.

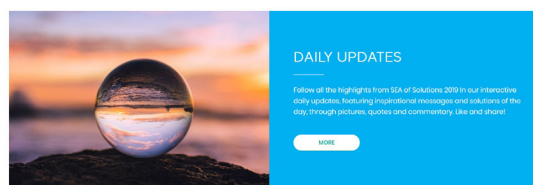
SEA of Solutions 2019 web platform

<http://sos2019.sea-circular.org/>

The event website for SEA of Solutions 2019 was designed and built as a comprehensive platform for the event promotion, outreach and knowledge management. Over 3,600 viewers accessed the website during the SEA of Solutions event, with over 20,000 page views recorded during almost 7,000 sessions – as of end Nov 2019.

The SEA of Solutions website will remain live and accessible as a valuable knowledge management platform – containing a repository of information, with embedded content from all SEA of Solutions social media platforms, links to websites of partners and exhibitors and a comprehensive database of experts (speakers), as well as links for resources, publications, initiatives, materials and presentations from the event.

Highlights – and most popular content on the website – include the Multimedia section, with six embedded videos developed for the event, and a Flickr gallery. The Programme section contains session-linked 'week at a glance' as well as day-by-day programme, with each session linked to session pages – with comprehensive information on the content of each session, with speakers linked to biographies. The Speakers section contains over 100 speaker biographies. Twenty-five Exhibitors are linked, as well as six partners and hosts.



SEA of Solutions YouTube Channel
Participate virtually at SEA of Solutions 2019 by watching all our plenary sessions on our YouTube channel.

[Watch](#)



SEA of Solutions 2019 Multimedia
Multimedia from SEA of Solutions 2019. View short films and a gallery of photographs.

[Multimedia](#)



Join the conversation on Twitter
What's your solution? Join the online conversation on Twitter. Together less plastic wasted!

[Twitter](#)

Daily reports

<http://sos2019.sea-circular.org/sea-of-solutions-2019-daily-updates/>

Daily reports were issued each evening from SEA of Solutions 2019, highlighting the main messages and sessions of the day, in a dynamic and interactive format (Adobe Spark) through summaries, quotations, pictures, links to videos and social media platforms. These four Daily Reports were embedded in the SEA of Solutions 2019 website, promoted through the Event App and promoted on social media. In total, the four Daily Reports were viewed 1,989 times, with a total of 28 social platform shares, as of end Nov 2019.

SEA of Solutions 2019 films

<http://sos2019.sea-circular.org/sea-of-solutions-2019-gallery/>

A series of social media / introductory films were developed for SEA of Solutions. A series of three social media / introductory films were developed – collectively entitled: Plastic Pollution Solutions– (1) Trade in plastic waste (2) Packaging waste and, (3) Finance, innovation and technology. These films were embedded in the SEA of Solutions website, promoted through social media channels, and published on the UNEP YouTube channel. Each film was shown during the relevant session on Day 4 – Forum on plastic pollution solutions, to effectively summarise and introduce each session topic. The films were also shown on rotation around the UNESCAP compound on monitors throughout the UNCC during SEA of Solutions 2019.

In addition, an introductory film was developed for Day 4 – Forum on plastic pollution solutions – containing key event messages and an inspirational message of ‘together, less plastic wasted’.

A filmed message was developed through the support of Inger Andersen, Executive Director, United Nations Environment Programme (UNEP), to welcome participants to SEA of Solutions 2019, and highlight the key aspects of UNEP’s work on plastic pollution prevention.

Finally, a SEA of Solutions 2019 event summary film was developed, to highlight key messages, and serve as a ‘round-up’ of all the key activities, sessions and solutions, from the four-day event.

In total, these films have been viewed a total of almost 2,500 times on YouTube, as of end Nov 2019. They have also been promoted on the UNEP Facebook account, reaching approx. 40,000 people.

The event was also ‘Livestreamed’ through UNEP Asia-Pacific YouTube channel. Each plenary session was filmed and uploaded to UNEP Asia-Pacific YouTube shortly after the session, to enable virtual participation. The livestream was accessible through the SEA of Solutions web platform: <http://sos2019.sea-circular.org/sea-of-solutions-2019-youtube-channel/> and promoted through the event app and on UNEP Facebook.

SEA of Solutions 2019 on Flickr

<http://sos2019.sea-circular.org/sea-of-solutions-2019-gallery/>

A gallery of SEA of Solutions 2019 photos is available on the Flickr platform set up for the event – and linked from event web platform. A total of 1000 photos are available for sharing, download etc. These photos have been viewed over 21,000 times as of end Nov 2019.

Twitter

Approximately 300 tweets were sent using #SEAofSolutions. The total reach of these tweets to Twitter users can be estimated at approximately 20,000 views. The event benefitted from the invitation to, and participation of, a group of key social influences, including Antoinette Taus, Alexander Rendell, Veronica Pedrosa, Nadya Hutagalung, and others. These influencers were active in sharing SEA of Solutions messages, multi-media, news, thoughts and commitments on Twitter and other social media platforms.

Event App

An event app was developed for SEA of Solutions on the UNEP event app platform Cloud Compass. The app contained links to the web platform for Programme, Speakers, Exhibitors, Daily reports, Videos. Schedule and speakers were integrated. The ‘livestream’ videos for each session/day, social videos and photo gallery were also available through the app. The app also contained venue maps, QR scanner and options for surveys / quizzes. Participants were provided with the option to network through the app by building their personal profile, linking to their social media / linkedin / personal data. 226 participants utilised the app. There were 11,200 engagements with the app registered. For sessions on the app, 4,480 engagements were registered. There were 1,230 user contributions, and 169 contact shares. This indicated the app was successful as an information dissemination and networking tool, particularly in driving users to the SEA of Solutions website platform and in sharing the website content. Instructions for accessing the app (through App Store on iOS devices and the Play Store on Android) and using the app were made available on the SEA of Solutions 2019 website: <http://sos2019.sea-circular.org/sos-2019-event-app/>

Print publications and outdoor media

http://sos2019.sea-circular.org/wp-content/uploads/2019/11/SEA_of_Solutions_2019_PROGRAMME.pdf

SEA of Solutions 2019 Programme was developed for limited dissemination in hard copy, and open use on the SEA of Solutions 2019 website. This 60 page publication covers the full programme, session content and speakers / moderators day-by-day, over 100 speakers with short biographies, co-hosts and partners, exhibitors and about SEA circular. The print programme contains links to the online programme. A SEA circular booth was developed for use at SEA of Solutions 2019, to bring prominence and raise awareness of the programme. A '3D' SEA of Solutions 2019 stand was developed, for photo opportunities and engagement. This was used effectively throughout the event – showcasing the key messages, logos, and website access points. A set of five visual, free-standing banners were developed with key messages and website link. Posters with SEA of Solutions website QR codes and Event App QR codes were available on registration desk and widely available around the conference venue.

Media coverage

<http://sos2019.sea-circular.org/media-coverage/>

SEA of Solutions 2019 was featured in over 120 media outlets during and post event. The event was promoted in a press advisory and press releases, on the launch of the UNEP report 'The role of packaging regulations and standards in driving the circular economy' and the announcement by Coca-Cola of the switch from green to clear PET plastic bottles for Sprite™. The following media outlets ran content: Daily Mail Online (UK), EuroNews, ABS-CBN News, ThisIsMoney.co.uk PhilStar, Toronto Sun, The Straits Times, Yahoo News, Vancouver SUN, Reuters US News, The Standard, National Geographic, London Free Press newswire, VN Express, The Irrawaddy, The Nation (Thailand), Eco-Business, Mail on Sunday (UK), ScandAsia, Fox 21, African Union News and many others.



DAY 1

Solutions with science



Overview

Setting the stage for the SEA of Solutions, Day 1: Solutions with science, considered how far the science has taken us – what do we know and what have we achieved? – and what we still need the science to tell us in order to successfully tackle marine plastic pollution. The opening day of SEA of Solutions discussed research and knowledge as the foundations for better, more effective decisions and actions.

Examples were presented of valuable research and action in the region. Discussions throughout the day showed that it is necessary to consider how data can be managed better, since good data and good knowledge drive good solutions. It is also important to acknowledge that there are data gaps on ecological impacts, leaching, health and chemicals – in order to move forward policy action globally. There is an urgent requirement to shift from incremental change to transformative action. Good science forms the foundation of good solutions.



Nadya Hutagalung noted that, to drive the societal change required, we must reach out to a very wide audience. A deep and detailed understanding of the challenges around marine plastic litter is the foundation for better storytelling that reaches people across all walks of life and helps instill commitment and a sense of purpose in the leaders of the future.

“The Asia Pacific region is poised to lead changes in global perception of marine plastic litter and its solutions. An integrated approach adopted by many stakeholders should be at the forefront of informed action. SEA of Solutions 2019 has created a platform for dialogue and collaboration.”

Nadya Hutagalung, UN Goodwill Ambassador

Drawing on the input of a wide range of experts from the region and beyond as well as participants from across stakeholder groups, sessions focused on some of the most topical issues related to marine litter: how well are we served by the current science and where are the gaps; how can we move towards better marine litter and plastic pollution data for better decisions; how can we get to grips with all the chemicals in and on plastics, and the health hazards and waste management challenges they entail; by what means do we address plastic leakage and pollution from trade in plastic waste, and enable trade that contributes to circularity; how do we safeguard the rights of vulnerable groups, including women in the informal sector, today as well as in the solutions of tomorrow; and how can we harness and further build on the current governance frameworks to help drive coherent and effective solutions?

The sessions also illustrated how interlinked all aspects of the plastic marine litter challenge are. For example, the diversity of plastics and the range of additives used make recycling more difficult or expensive, contributing to drive trade in waste, including illegal trade. This places a burden on regulators and enforcement agencies, and while it can provide livelihoods to informal sector workers it is a source of additional exposure to chemical pollution which disproportionately affects women. Leveraging global and regional governance frameworks is critical to ensure coherent and effective responses, which requires comprehensive data and sound science.

Overall, there is a need for more integrated solutions to what is, fundamentally, a very integrated problem. A more strategic approach to voluntary commitments by different stakeholders will help ensure that incremental actions contribute towards transformational change. An analysis of 580 voluntary commitments made over the past 5 years (2018) carried out by the Ocean Recovery Alliance on behalf of UNEP, shows that in large part the commitments did not achieve as much as hoped, mainly because they were too limited in scope, not fully implemented or followed up on, not sufficiently funded, or one-off actions not interlinked with other actions. The scorecard used to evaluate the effectiveness of these commitments can also be applied to future ones. A new toolkit is available to ensure that new commitments can be made stronger and more effective. This includes consideration of the magnitude of the commitment, or how much impact it can make, the speed at which it can be implemented or activated and, importantly, replicability and scalability, so that increased effort can be put towards scaling up proven solutions. The toolkit can be used by entities of any size or type across government, private sector and civil society.

Solutions and recommendations

- While many aspects of marine litter and marine plastic pollution require further research, we do have enough knowledge for assertive action across the plastic value chain.
- Bringing together and strengthening multiple marine litter and plastic pollution data streams will provide a better foundation for strategic planning and prioritization of actions. Tools and approaches exist that can support this.
- Using a lifecycle assessment approach, including for example in relation to additives in plastic and to evaluate new approaches and technologies will help drive the transition towards a circular economy.
- A more sensitive understanding of the needs and interests of disadvantaged groups can support more people-centred policy pathways and more sustainable solutions.
- Improving how we communicate knowledge on marine litter and solutions will help reach a broader audience and more effectively inform action across stakeholder groups.
- There is an extensive policy and governance framework at global, regional and national level. It is important to leverage these frameworks and the mechanisms and processes at our disposal, utilize the synergies that exist between them, and strengthening and aligning them where needed, such as in relation to addressing waste trade.
- All of this requires commitment to partnerships, enhanced cooperation and coordination.



**Opening plenary –
What does the latest science tell us?
09:00 – 09:30**

Dr Wijarn Simachaya, President, Thailand Environment Institute, highlighted the many interventions undertaken by Government of Thailand to combat plastic pollution. He expressed the critical nature of policy and regulatory frameworks for driving concerted action for comprehensive solutions. The ASEAN community has adopted the Bangkok Declaration for combating marine plastics and circular economy in the ASEAN region. Thailand has adopted a 20-year (2017-2036) roadmap for sustainable production and consumption of plastics.

Isabelle Louis, Deputy Director UN Environment Programme (UNEP), Regional Office for Asia and the Pacific highlighted the need for an integrated action of collective responses to the challenge of marine plastic litter. This collaboration of all stakeholders – from science, business, finance, investment, local and national governments, communities and individuals – can lead actions. She noted that SEA of Solutions 2019 is highly strategic, given the contribution of Asian countries towards marine plastic litter, but also highlights opportunities for action. Making SEA of Solutions an annual event will contribute by providing a platform for bringing together informed stakeholders for serious deliberations on this vital issue.

“It cannot be denied that pollution from waste, especially plastic waste, is one of the most cumbersome and complicated environment and sustainable development challenges at all levels.”

Dr Wijarn Simachaya, President, Thailand Environment Institute,

“The Asia Pacific region is poised to lead changes in global perception of marine plastic litter and its solutions. An integrated approach adopted by many stakeholders should be at the forefront of informed action. SEA of Solutions 2019 has created a platform for dialogue and collaboration.”

Isabelle Louis, Deputy Regional Director, UNEP Regional Office for Asia and the Pacific



Parallel session 1 – State of the science: How does scientific research support action to combat marine plastics in South East Asia? 09:30 – 10:30

Information and presentations

An on-going investigation into the status of research on pollution from marine plastics in South-East Asia conducted by a trans-disciplinary team from the National University of Singapore identifies similarities and differences in the research extent, focus, methodology and sampling environment among countries in the region. Much work is primarily descriptive, and surveys and assessment of occurrence of marine plastics and research in ecological and environmental impacts are two most common areas of research. Indonesia stands out in terms of efforts made to examine various research focuses and using a diversity of research methodologies. Preliminary findings indicate that, while volumes of published research are higher in three East Asian countries (China, Republic of Korea and Japan), primary emphasis appears to be the same as in South-East Asia countries. However, there is also a wider range of work on topics such as the economic impact of plastic pollution and processes of plastic fragmentation.

Host and session lead:

- National University of Singapore, Centre for International Law (CIL)

Moderator:

- Youna Lyons, Senior Research Fellow, National University of Singapore (NUS)

Discussants:

- Yuke Ling Tay, Research Assistant, CIL, NUS
- Amanda Lim Yue Han, NUS
- Wenxi Zhu, Head, Programme Specialist, IOC-WESTPAC

Solutions and recommendations

- The ‘foundational science’ needs to be strengthened so that sources, transport, fate, and impact are better known, and knowledge gaps such as in relation to bioaccumulation are addressed. This is critical for a more sensitive assessment of risk, as well as for assessment of social and economic implications. This requires long term effort in which the study presented can help target investment.
- Closer analysis of areas and characteristics of research conducted, as well as greater consideration of on-going research as well as domestic reports by national governments in national languages will help generate a more accurate and detailed picture of the status and knowledge and gaps.
- Developing appropriate ways of sharing information with and across research communities, policy-makers, private entities and public stakeholders is needed, such as a public inventory of research studies realized in or about the region. This can help strengthen networking among institutions and catalyze new research cooperation within the region and internationally.
- Existing knowledge does support a range of policy and management responses, as evidenced by intergovernmental frameworks at global and regional levels as well as national efforts. Further analysis of the work that global and regional intergovernmental organizations are engaged in and how the state of the science may limit this will help drive particularly policy relevant research effort.

“Expanding the geographical scope of the research to ASEAN +3 will improve the research to reflect the real status of the issues given the nature of marine plastic problems as transboundary issues.”

Yuke Ling Tay, Research Assistant, CIL, NUS

“There is a need to revise and update the database and repository of marine debris research in South-East Asia. We need to analyze and summarize what is known and what is not known yet. This mapping will illustrate the ongoing research and the gaps within the research.”

Youna Lyons, Senior Research Fellow, National University of Singapore (NUS)

“Current research mainly focuses on the distribution and abundance of plastic waste, while the source and transportation pathways of plastic waste need more consideration, for a more sensitive understanding of risk.”

Wenxi Zhu, Head, Programme Specialist, IOC-WESTPAC



Parallel session: Gender and social dimensions of marine litter pollution (Organised in collaboration with Stockholm Environment Institute – SEI) 09.30–10.30

Information and presentations

This session considered how social groups, including men and women, are differently impacted by plastic pollution along the value chain due to underlying social inequalities. Discussions focussed on the role of informal waste workers and women in waste management and as consumers. Social gender roles mean that men, women and children engage in plastic production, consumption and waste management differently and evidence shows that women are more affected by structural inequalities and exposed to health risks associated with plastic products and pollution with little access to social protection. A people-centred approach is essential to recognize disproportionate impacts of plastic mismanagement and to develop inclusive pathways to solve pollution.

Waste management in South-East Asia relies on the informal waste management sector and plastic waste collectors. Municipal and rural waste management services are inadequate, so the informal sector is vital. But solutions will be found through placing greater value on waste management workers – particularly in the informal sector and at the bottom of the value chain, where workers are mostly women. Solutions include; placing more value on plastic itself and holding accountable businesses producing waste. To improve the livelihoods of waste collectors, it is necessary to remove the societal stigma of their work and waste in general and acknowledge their labour as public services. Solutions can also be found through awareness raising and capacity building for governments and businesses, in order to address those needs of waste collectors and allow them to form unions. Businesses are the duty bearers of waste production and management and must be held more accountable.

Solutions can also be found when waste workers are organized – or unionized. In coastal areas, solidarity between waste workers and fisherfolk will support functional waste management and reduce marine plastic pollution. Giving value to waste and building markets to recycle plastic will also increase the value of waste management. It is essential to understand and include the informal waste sector, to develop a pathway to value, involve and support waste pickers and futureproof their livelihoods.

Moderator:

- Niall O’Connor, Director, Asia Centre, Stockholm Environment Institute

Discussants:

- May Thazin Aung, Research Associate, Stockholm Environment Institute
- Kabir Arora, National Coordinator, Alliance of Indian Wastepickers
- Sumangali Krishnan, Chief Business Officer, GA Circular, Singapore.
- Natalie Harms, Associate Programme Officer, COBSEA, UNEP

Solutions and recommendations

- We need to understand, recognize and consider the informal sector as part of the current waste management system, so that development of solutions to today’s plastic pollution problems do not entail loss of livelihoods and replacement of one vulnerability with another.
- Supporting organization or unionization in the informal sector can help give people voice.
- In coastal areas, fostering solidarity between waste management workers and fishermen is important for functional waste management
- Human rights and gender policies and their implementation need strengthening especially at the sub-national and local level, where most waste management actually happens.
- There is a need for awareness raising and capacity building for governments and businesses as key duty bearers to protect human rights, as well as mechanisms for redress and better accountability. Outreach across stakeholders groups need to be stepped up.

“We are not doing enough. Even if there are policies in place to support informal waste pickers – who are mainly women. We are not valuing plastic, we are not valuing waste, we are not valuing women.”

May Thazin Aung, Research Associate, Stockholm Environment Institute



Transboundary movement of plastic waste (Organized in collaboration with UNODC) 11.00–12.30

Information and presentations

Governments have started to adopt stricter regulations and legal frameworks, changing the dynamics and movements of transboundary plastic waste. Available trade data indicates that, between 2016 and 2018, trade volumes were reduced almost by half. China used to be the end point of more than 60% of exported plastic waste. Malaysia is now the top importer with a share of 12% of the global total, and moving towards a ban on import of plastic waste following the model of China. Plastic waste is traded from developed economies for recycling as a cost saving measure, with significant leakage e.g. as a result of weaker environmental standards, governance and enforcement.

A fundamental challenge is the absence of a proper, functioning market for second-hand materials, global recycling rates remain low, and as much as 20% of the plastic scrap in the global south has no market value. Solutions for plastic management including trade for recycling and disposal need to balance economic interests/need and the significant health and environmental risks posed by a mismanagement.

Moderator:

- Giovanni Broussard, Regional Programme Coordinator, UNODC

Discussants:

- Michikazu Kojima, Senior Economist, Economic Research Institute for ASEAN (ERIA)
- Jayaprakash Murulitharan, Principal Assistant Secretary, Ministry of Energy, Science, Technology, Environment and Climate Change, Malaysia
- Maria Tsakona, Senior Expert Waste Management, GRID Arendal
- Chaowat Sukulworawit, Thai Customs Department

Solutions and recommendations

- There is a need for closer cooperation at the regional and global level to achieve coherent national legal and regulatory frameworks, and information on the trade in plastic waste needs to be shared efficiently among countries of origin, transit and destination. Legal instruments in ASEAN can promote consistency of approaches across countries and encourage cooperation, including around regional recycling mechanisms.
- Strengthening of regulatory frameworks and associated enforcement is needed. Amendments to the Basel Convention being discussed to include plastic waste as a hazardous waste would require prior informed consent by the importing country. Considering the illegal trade in waste plastic a serious form of transnational organized crime would give efforts to control it more teeth.
- A circular economy approach will reduce leakage from the system. This requires improved partnership between public entities and private sector (e.g. recyclers) to develop sustainable and legitimate solutions including creating a demand for second-life plastics.
- There is a continuing need for investment in developing capacity, including in particular in the control and enforcement of waste trade.

“In 2018, the total international trade of plastic waste reached 7.3 million tons, when three years back it was 14 million tons – it has reduced by more than 40%.”

Michikazu Kojima, Senior Economist, Economic Research Institute for ASEAN (ERIA)

“You may wonder why the UN Office on Drugs and Crime (UNODC) gets involved in discussions about environmental issues, such as the trade in plastic waste; the truth of the matter is that this sector is vulnerable to transnational organized crime and we believe that also the institutions of the criminal justice sector have a role to play to improve the legality of this sector.”

Giovanni Broussard, Regional Programme Coordinator, UNODC



**Parallel session – Towards better data:
Harmonized marine litter monitoring,
technologies and methods
(Organized in collaboration with the Global
Partnership on Marine Litter)
13.30–15.00**

Information and presentations

The session focused on finding solutions through better data, including how assessment and monitoring can underpin effective action, and how new technologies can be applied to define and prioritize interventions to address marine plastic litter and tracking their efficacy. Monitoring and assessment are essential steps towards addressing specific questions about marine litter, including microplastics. These are needed to assess the state or level of pollution i.e. set a baseline, provide objective information to design appropriate mitigation measures e.g. product, polymer and to assess the effectiveness of the mitigation methods and promote adaptive management. UNEP, through the Global Partnership on Marine Litter is facilitating data and information generation and exchange through capacity building and online tools being developed, such as a white paper on a global monitoring and action platform, a policy toolkit, a finance data base etc.

The CSIRO Marine Debris Research Program is analysing data from beach clean ups to understand the effects of plastic bans. The Global Plastics leakage project validates estimates of pollution from land to identify hotspots and understand drivers of plastic pollution. UNEP is working to better understand the key hotspots, impactful polymers, products, life cycle stages and pathways in order to identify holistic solutions and key areas of interventions - and to support government converging towards instruments to implement the interventions. UNEP is also providing guidance for reports on the national level, and developing an online platform for user-friendly data on plastics which will be launched in 2020.

The UNEP CounterMEASURE Project utilizes multi-source satellite imagery to analyse the Mekong River and the project shares all their analysis and codes openly (CounterMEASURE website will be launched in 2020). The data includes statistics on seasonal plastic flooding patterns to identify peak discharge patterns and field data collections gathered with drones, to initiate beach clean-ups.

In Indonesia, a National Plan put the focus on plastic pollution as priority. Joint efforts are underway between Indonesia and international partners to understand the hotspots through beach plastic debris monitoring. In the Citarum River, scientific outcomes were translated into action. In 22 sectors at the river delta, new technologies were used to empirically verify the modelling. The results showed that with 60% single use plastic, this is the highest contributor to plastic litter in the river delta. The majority of the items are plastic bags. The outcome of this research encouraged the local government of the 22 districts to take local regulations in action banning the use of single plastic goods. This example showcases the importance of linking data to target interventions.

Access to data on plastic flows and leakage points will allow for better understanding of how to keep plastics at the highest possible value chain - how we avoid polluting oceans and rivers. Standardized data collection and new technologies, such as drones and remote sensing, can be employed to better conduct and disseminate research. Citizen Science can be very useful to get the bigger picture of plastic debris pathways. Social media can also prove useful in creating new citizen science platforms. Solutions could also be reached through a global database, or project repository, incorporating information on production and consumption into analysis of plastic leakage and wastage, to better assess to address the extent of plastic debris.

Moderator:

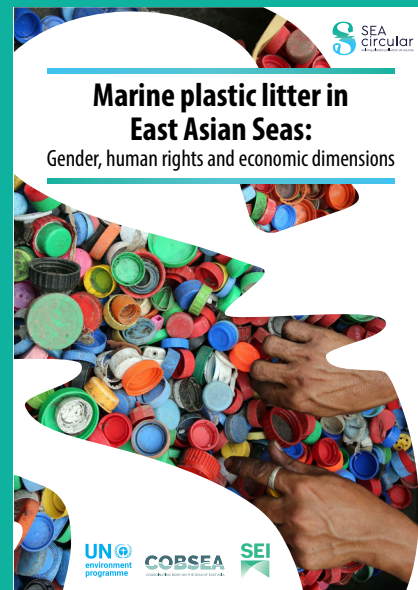
- Heidi Savelli, UNEP GPA/Global Partnership for Marine Litter (GPML)

Discussants:

- Qamar Schuyler, Research Scientist, Commonwealth Scientific and Industrial Research Association (CSIRO)
- Lixin Zhu, East China Normal University
- Ran Xie, Associate Programme Officer, Consumption and Production Unit, Economy Division, UN Environment
- Kavinda Gunasekara, Senior Programme Specialist, Asian Institute of Technology
- Nani Hendiarti, Director, Marine science and technology, Coordinating Ministry of Maritime Affairs (CMMA)
- Suchana Chavanich, Associate Professor, Chulalongkorn University
- Tatsuya Abe, Ministry of the Environment, Government of Japan

Solutions and recommendations

- To find solutions to address and tackle plastic pollution, it is essential to utilize appropriate scientific knowledge and useful data. Data is crucial to understand the sources and drivers, dynamics and distribution of marine litter and its impacts on wildlife, which is important to formulate adequate management responses. Baseline setting is essential to measure impacts of mitigation measures as well as achievements.
- Unfortunately, existing data on plastic pollution is often not available to stakeholders in ready-to-use formats, including e.g. for policy makers. It is therefore important to close the gaps between scientific and monitoring data and policy making, as well as improve communication to better share information with e.g. local communities and other stakeholders, and further engage them in data collection through citizen science or other actions. This could be done by translating data into stories to make the information more relevant to a larger group.
- Better coordination and collaboration is necessary to avoid duplication and complement efforts – harmonization or standardization of data and using available tools and approaches can also allow us to get “the bigger picture” / trends about the extent of plastic debris. While seeking better data, the identification of trends can guide some action if data is compatible.
- Innovation is needed, not only in technologies for earth observation and e.g. the use of drones, but importantly also in how we share and use information. The importance of global online platforms or market-places where it is possible to see who is doing what was emphasized.
- International or regional platforms or partnerships such as COBSEA are important to facilitate coordination in the implementation of regional action plans on marine litter and support national efforts e.g. through capacity building for monitoring.



Publication launch: Marine plastic litter in East Asian Seas: Gender, human rights and economic dimensions

Read

A new report entitled Marine plastic litter in East Asian Seas: Gender, human rights and economic dimensions was launched at SEA of Solutions 2019 at the Parallel session on Gender and social dimensions of marine litter pollution.

This report provides insights on the gender, human rights and economic dimensions of marine plastic litter to inform project design and activities and to ensure a fair, equitable and ethically-sound course of action, that leads to more effective, appropriate and sustainable outcomes in the longer term. The analysis highlights initial findings and existing knowledge gaps and provides recommendations for more equitable decision making, while recognizing the need to strengthen the evidence base on issues discussed. This study was prepared by the Stockholm Environment Institute (SEI) under the SEA circular initiative implemented by the United Nations Environment Programme (UNEP) and the Coordinating Body on the Seas of East Asia (COBSEA), with support from the Swedish Government.



Parallel session: Governance frameworks to manage marine plastics (Organized in collaboration with National University of Singapore - NUS) 13.30-15.00

Information and presentations

The global institutional and legal framework encompasses on-going work streams with a general environmental mandate, such as effort in response to UN Environment Assembly Resolutions. It also encompasses effort initiated under specialized bodies, including e.g. in the context of the chemical conventions that apply to international trade in plastic waste and control of toxic additives to plastic polymers, as well as in relation to plastic pollution from fisheries and shipping. The fast pace of work on many fronts under these bodies was highlighted.

At the regional level, two parallel intergovernmental processes address marine plastic pollution: the COBSEA Regional Action Plan on Marine Litter, a revision of which was adopted in 2019, as well as effort through ASEAN including the Bangkok Declaration on Combating Marine Debris in ASEAN Region 2019, the ASEAN Framework of Action on Marine Debris, and in that context an emerging regional action plan. In the North West Pacific, the NOWPAP Regional Action Plan on Marine Litter has catalyzed extensive work including periodic assessment and establishment of a marine litter database.

Global instruments such as the Basel Convention, and efforts mandated by the UN Environment Assembly (UNEA) provide opportunities to advance action in the region through partnerships and collaboration. There are opportunities to exploit synergies between existing and emerging regional frameworks, such as the COBSEA Regional Action Plan MALI and the ASEAN framework and action plan (under development). However, countries may engage in several international processes, often from different ministries or with different focal points. Managing this engagement requires strong national level coordination and policy cohesion to support international efforts. New regional centres such as the Regional Capacity Centre for Clean Seas in Bali and other centres (under development) can contribute to specific aspects of this work. The trade in plastic waste illustrates the need for regional cooperation, common frameworks, standards and harmonized approaches.

Host and session lead:

- National University of Singapore (NUS), Centre for International Law

Moderator:

- Qamar Schuyler, Research Scientist, Commonwealth Scientific and Industrial Research Association (CSIRO)

Discussants:

- Vu Hai Dang, National University of Singapore, Centre for International Law
- Karen Raubenheimer, Lecturer, University of Wollongong
- Kim Nong, Deputy Secretary General for National Committee for Coastal Management and Development, Ministry of Environment, Cambodia
- Yegor Volovik, Coordinator, Northwest Pacific Action Plan
- Yasuhiko Hotta, Programme Director, Sustainable Consumption and Production, Institute for Global Environmental Strategies (IGES)

Solutions and recommendations

- The potential for a synergistic relationship between COBSEA and ASEAN policy frameworks on marine litter should be exploited. Similarities in goals and objectives and differences in approach and institutional mandates make them mutually reinforcing. There need for necessary information exchange is recognized in both frameworks.
- These regional frameworks provide important mechanisms for advancing the implementation of global mandates. They may also give the region voice in processes where participation of individual countries of the region is limited, such as G20.
- An integrated approach at the national level including coordination across ministries and sectors is essential to drive cohesion at regional and global levels.
- Moving towards a circular economy will require further analysis and development of the current policy framework. Disconnects between the circular economy model and existing institutional mechanisms, such as impacts of unilateral restrictions to the trade of plastic, knowledge gaps and technical capacity gaps were highlighted.
- Ensuring adequate flow of information on policy provisions and processes across stakeholder groups is critical.

“Five of the countries in SEA produced more than half of the marine litter in the ocean. Yet, under the regional framework and regional mechanisms, serious action is taking place.”

May Thazin Aung, Research Associate, Stockholm Environment Institute

“Marine plastic pollution has incentivized a wider political movement to mainstream elements of a more circular economy into society.”

Yasuhiko Hotta, Programme Director, Sustainable Consumption and Production, Institute for Global Environmental Strategies (IGES)



Chemicals and Plastics (Organized in collaboration with UNEP Chemicals Branch) 15.30-16.45

Information and presentations

Plastics and in particular their toxic additives is an issue of global concern for human and environmental health. There are many different types of plastics and more than 1300 chemical additives. For example, hazardous flame retardant additives are contained in many consumer products. Leaching from landfills is a major contributor of BPA (an endocrine disrupter believed to also cause cancer) to the natural environment. Research on wildlife suggests that plastic additives are retained in marine plastics and microplastics and absorbed into tissue where it accumulates. The high cost of recycling plastic in developed countries favours export to Asia where environmental standards and labour cost may be lower. Marine plastic pollution is chemical pollution, and to deal with this we need to reduce plastic production and use substantially. Improving plastic design and recyclability will enable a circular economy.

The tools exist, but capacity building is required across the board for alternatives assessments. The Stockholm Convention includes provisions for the phase-out and substitution of hazardous chemicals such as POPs. However, the challenge remains that there are many different types of plastics and a huge range of chemical additives. Therefore, there is a need for a comprehensive list of chemical additives and their positive/negative impacts.

Consensus was shared that a reduction, restriction and phase out of selected plastic products is required. In order to reduce landfill leachate, it is necessary to separate organic and non-organic waste. Segregation of plastic waste from organic waste at the individual level would prevent conversion of plastic into more toxic by-products. Chemicals and additives should be prioritised in the design and production stages since it is too late and too costly to mitigate their effects in later stages. Priority actions to address chemicals in plastics include:

regulation and enforcement, research, transparency, awareness and education, phase-out and reduction.

Moderator:

- Sandra Avérous Monnery, Programme Officer, Chemicals and Health Branch, Economy Division, UNEP

Discussants:

- Hideshige Takada, Professor, Tokyo University of Agriculture and Technology
- Chen Yuan, Basel and Stockholm Convention Regional Centre for Asia and the Pacific (BCRC-SCRC China)
- Nguyen Anh-Tuan, Vietnam Environment Administration (VEA), Ministry of Natural Resources and Environment, MONRE
- Roland Weber, International consultant, Stockholm Convention Secretariat

Solutions and recommendations

- Additives any given product contains must be known (labeled). This is currently not the case. Better documentation of all the chemical additives and their properties at different product lifecycle stages is required.
- Plastic additives should be addressed at the design/production stage to prevent the need for costly measures to address issues further down in the lifecycle. Stronger limits on use of hazardous plastic additives may mean that current technology for separation of additives will be inadequate, and/or that more expensive technology has to be used.
- Hazardous materials in plastic that are currently difficult or costly to separate and manage appropriately can be substituted with non-toxic alternatives. This has basis/precedent in the Stockholm convention.
- The costs of plastic disposal and its environmental, economic and social impacts need to be internalized in the cost of plastic production and use.
- Capacity building is required, including for lifecycle assessment of alternatives
- There is also a need for better science communication for decision makers and laymen, including better use of 'influencers'.

"BPA and other endocrine disrupters are believed to cause cancer and other health impacts. Research on exposure to additives from plastic ingestion in biota shows that chemicals are absorbed into tissue."

Hideshige Takada, Professor, Tokyo University of Agriculture and Technology

DAY 2

Plasticity Bangkok

@ SEA of Solutions



Overview

Day 2 of SEA of Solutions – Solutions through innovation and business – featured Plasticity – the well-established, business-led and solutions focused plastic circular economy forum. Plasticity was invited to be part of SEA of Solutions 2019, to showcase informed eco-optimism, exciting new circular economic thinking and technological advances. Plasticity Bangkok @ SEA of Solutions provided insights into the reality of the plastic value chains in Asia as well as into business-based solutions to make plastic use circular and sustainable. Recognising the societal and environmental damage caused by plastic pollution, business representatives shared their challenges, their commitments and their solutions to tackle plastic waste upstream to prevent it reaching waterways.

Plasticity Bangkok @ SEA of Solutions shed light on innovative business models to collaborate and engage governments, consumers and the informal economy. Plasticity called for locally viable, scalable and cost-effective solutions that reconcile sustainability and marketability. It is clear that ‘whole of value chain’ collaboration, industry-to-industry dialogues, public private partnerships, strategic partnerships, regional alignment, new technologies and education are all part of the solutions.





Plastic circularity today: The macro, micro and continuing disruption

08.30-10.20

Presentations

The first session at Plasticity Bangkok @ SEA of Solutions was opened by Gillian Hyde, Resident Plasticity MC, followed by five TED Talk-style speakers addressing the macro and micro of the plastic circular economy.

Doug Woodring set the scene, outlining the increasing challenges and opportunities in Asia for businesses to make true inroads in circular economy. Steve Wong highlighted the dramatic change in plastic scrap trading in the light of China's National Sword and the Basel Convention Amendments. He noted the new trading opportunities which are emerging, which need to be fostered.

The most recycled plastic – PET – was highlighted in Sumangali Krishnan's presentation, as she released GA Circular's detailed study on PET recovery (including the informal sector) across ASEAN and recommendations on how to increase it. A second announcement came from Belinda Ford. Demonstrating The Coca-Cola Company's commitment, she shared the news that the 'lower recovery value' green PET is being phased out of their products in the region.

The last speaker, Oscar Wang, discussed his agency's detailed work on contamination within recovered plastic food packaging. He indicated the need for a 'clean' supply chain in Asia and looked at business commitments for making plastic production and management clean, safe and sustainable. Business representatives shared the societal concern over the damage of plastic pollution to the environment and to people, and showcased a range of ways to solve the plastic pollution problem. The session featured business models which bring consumers along, recycling options which ensure quality and safety – particularly for food packaging – and the engagement of the informal sector in circular plastic management.

The speakers joined a facilitated Q&A session. Highlights included recognising the need to support innovative technology development and the implementation of balanced economic incentives drivers. Scaling-up recycling will only happen when the true cost of landfilling is accounted for and fully recognised. Panellists also noted that many innovations and schemes require collaboration with non-business communities to extract maximum resource value. The backing of policies is also needed to encourage segregation and collection of waste. Together these interventions will transform industry and public behaviours and perceptions, to promote plastic circularity.

Speakers:

- Doug Woodring, Founder, Plasticity and Ocean Recovery Alliance
- Steve Wong, MD, Fukutomi Ltd. / Chair, China Scrap Plastics Association
- Sumangali Krishnan, Chief Business Officer, GA Circular
- Belinda Ford, Public Affairs, Comms and Sustainability Director, Coca-Cola ASEAN
- Oscar Wang, Deputy Director, IQTC

Day 2 Facilitation

Emcee – Gillian Hyde, The Plastics Circle and Plasticity
Q&A – Trish Hyde, The Plastics Circle and Plasticity

"The industry can help educate the consumer that alternatives made from recycled materials are possible and safe."

Doug Woodring, Founder, Plasticity and Ocean Recovery Alliance

"We talk about waste every day, but if we can recycle, then it is not waste."

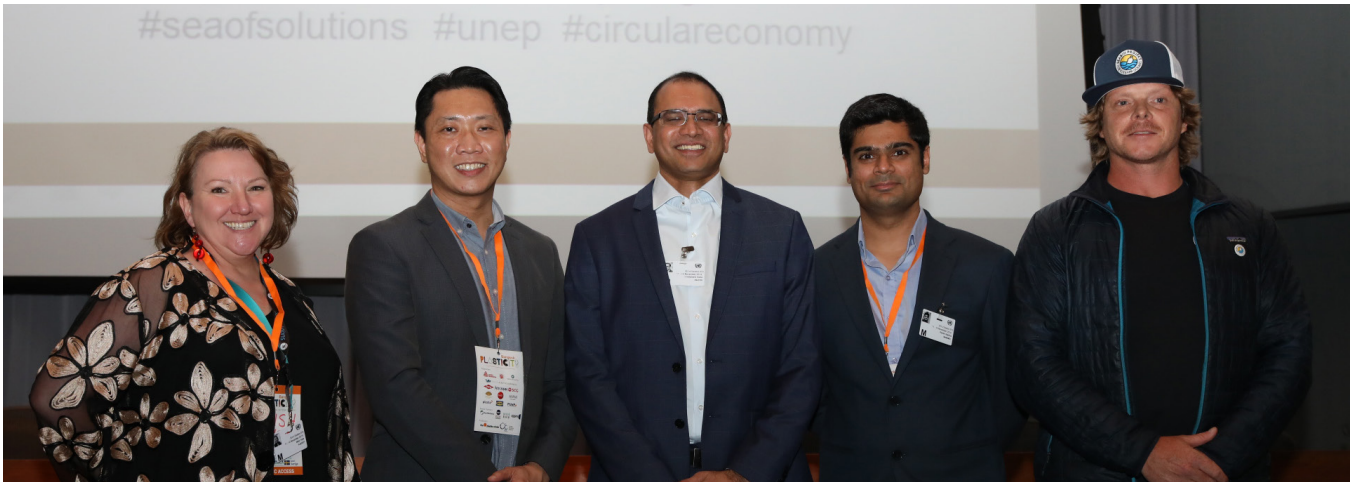
Steve Wong, MD, Fukutomi Ltd. / Chair, China Scrap Plastics Association

"When it comes to food packaging, safety is non-negotiable and sustainability is a demand. We need to be active to find solutions."

Oscar Wang, Deputy Director, IQTC

"We know the world has a packaging problem. Our vision has to be part of the solution."

Belinda Ford, Public Affairs, Comms and Sustainability Director, Coca-Cola ASEAN



Pioneering our future: Innovation takes inspiration and perspiration

10.40–13.00

Presentations

This session showcased real-life innovation and business models to drive the plastic circular economy. Vivek Sistla outlined how innovation and collaboration are at the heart of Unilever’s approach to sustainable business. Rather than shying away from difficult conversations, these can be used to stimulate new thinking and ultimately solutions.

Pei Kang profiled an inclusive sustainability business model – making bio-based compostable plastic food packaging and the onsite composting facility. Pete Ceglinski showed his marina plastic recovery solution, noting the challenges faced in trying to make the devices from recovered plastic.

Reinforcing the collaboration needed to create true change, Suracha Udomsuk shared SCG’s approach to internal and external innovation and partnership projects. Ravish Majithia highlighted label waste – the rarely discussed inhibitor to maximize plastic recovery, and his innovative ink that make the labels magnetic for easy extraction.

The facilitated Q&A session that followed reinforced themes from the presentations. For success, innovation needs to be functional, scalable and cost effective; sustainability needs to create business value; disruptive business models and initiatives need strategic partnerships across stakeholders and strong engagement; and, critically, investment.

Following the waste hierarchy, panellists highlighted the need for responsible use of plastic. The innovation challenges lie in creating second life markets, designing for effective recovery and value, and creating recovery models. In the face of the ubiquitous demand for convenience and the urgent need for sustainability in Asia, innovation in alternate materials can relieve pressure on the environment. But this must be backed by

science and matched with appropriate waste collection and processing systems. Solutions that build on existing resources are most cost-effective, feasible, and scalable.

Speakers:

- Vivekanand Sistla, R&D Director, Beauty & Personal Care, Unilever Thailand
- Pei Kang Ng, CEO / Co-Founder, Tria Bio
- Pete Ceglinski, CEO, The Seabin Project
- Suracha Udomsuk, Chief Technical Officer, Siam Cement Group (SCG)
- Ravish Majithia, Founder & Materials Scientist, Magnomer

“The inverse relationship between sustainability and convenience can be reconciled through innovative solutions.”

Pei Kang Ng, CEO and Co-Founder, Tria Bio

“In order to be relevant, we need to be innovative in driving sustainability.”

Suracha Udomsuk, Chief Technical Officer, Siam Cement Group (SCG)



Plasticity Prize

Recognising the importance of entrepreneurship in this complex and evolving space, Murray Hyde, Founder of PlastX, introduced The Plasticity Prize. Five entrepreneurs pitching their plastic circular economy solutions: Aleyda Santos - GAIA initiative, Yameen Mohamad - Heng Hiap, Stephanie Stubbe - AniPal, Johann Tranchell, and Chris Oestereich - Full Circle Filament.

In a close audience vote, two winners emerged – **Chris Oestereich, who pitched Full Circle Filament** – 3D printing filament made from recycled industrial and collected PCR plastic; and, **Stephanie Stubbe who pitched AniPal** – a sustainable range of pet accessories made from recycled plastic that creates animal ambassadors for change.

[Chris's award-winning pitch](#)

[Steph's award-winning pitch](#)

Runners up:

Aleyda Santos, GAIA initiative

A social enterprise that promotes a system approach to circularity. [Read more](#)

Yameen Mohamad, Heng Hiap

Practical solutions for traceable ocean plastics: A track and trace programme for recycled plastic; a QR code to share the journey; and living coral ambassadors for the ocean. [Read more](#)

Stephanie Stubbe, AniPal, Australia

Animal ambassadors for change to inspire the pet owner community to adopt environmental and sustainable solutions building on recycled plastic alternatives, recycled ocean plastics, and innovative animal products. [Read more](#)

Johann Tranchell, Sri Lanka

A new eco-friendly vision for plastic production to move toward recycling, invest in alternative biodegradable products, and invest in education. [Read more](#)



Making circular the default: Embedding circularity for a circular economy

13.45–15.45

Session three focused on how businesses can influence and create circularity - the business case, the challenges and benefits of building a product-based circular economy, individual influence, balancing marketing and sustainability for brand reputation and approaches to regulation that deliver quadruple bottom line outcomes.

Kicking off the session, Ran Xie highlighted successful examples of embedding circularity from the EU. Eduardo Garza shared his business philosophy that recovered plastic can be fashionable, and that bold initiatives make environmental, social and business sense. Han Zhang brought to life the plastic circular economy challenges and opportunities in the region, with insights on his company's approach. Reflecting the diverse nature of plastic, Ambrogio Miserocchi profiled collective efforts that are closing the loop on ghost nets.

Key themes from across the speakers included offering consumer options, fostering revenue-generating community-based recycling, plastic recovery and recycling programmes for specialized items such as fishing gear. It was clear that locally viable solutions depending on plastic type/item are necessary since no one-size-fits-all. Local buy-in and innovation are necessary to develop efficient and scalable waste management systems. Making the plastic value chain circular needs support and action from all sectors. Whilst industry has the research and expertise which can be applied in local, national and global environments, they need consumer demand for sustainable products, as well as governmental policies and local community engagement supporting the shift.

Speakers:

- Ran Xie, Associate Programme Officer, Economy Division, UN Environment Programme
- Eduardo Garza, Creative Director & Partner, Waste2Wear (Delivering a Big and Bold Business Initiative)
- Han Zhang, Director, Sustainability APAC, Dow Chemicals
- Ambrogio Miserocchi, Management Associate, Sustainability Development, Thai Union Group PCL

Hypothetical – The Future of Plastic Trade

This session turned into a shared learning experience, in the form of a Hypothetical – a curated set of scenarios used to explore complex and sensitive issues. This Hypothetical set a future state where three countries explored their plastic waste and pollution issues through economic social and environmental lenses, before embarking on negotiating a tri-lateral plastic waste trade agreement. With six volunteers and audience participation, the 'island' nation identified its weak negotiating position before some insightful reform; the 'European-based' nation examined their national options, and realising they wanted trade, offered significant incentives; and the 'ASEAN' nation seized the opportunity to clean-up and profit from a CE plastics industry.

Hypothetical host:

- Trish Hyde, The Plastics Circle and Plasticity



The numbers game: Money makes the world go round & the circle circular

16.10–17.15

Presentations

This session combined two aligned but sometimes conflicting topics – Financing and operational circularity. Regula Schegg started the session with a deep dive into the regional need for alternate funding models to stimulate commercial innovative, and specifics of how Circulate Capital is addressing the gap for plastics through partnerships. Speaking from the financial perspective, Regula was joined by Simon Baldwin and Doug Woodring. They tackled the challenging topic of investing for-profit or for-purpose. The panellists discussed the difference between philanthropic funding and enterprise financing, with the latter able to take social and environment benefit into the investment consideration, but fair commercial return is still required so that more investments can be made.

Speaking to the operational and practical aspects of the current and future circular economy were Maurice Evers, Helmut Schmitz, Singh Intrachooto, and Richard Jones. The panellists discussed the flows of plastic materials and dollars and identified the persistent undervaluation of plastic as a core flaw of the plastic (mis)management system. They also noted that lack of investment in second-life markets compounds the low valuation.

The combined panel agreed that traditional financial models are not overly effective in the complex and evolving landscape of plastic recovery and circular economy. However, there are innovative finance models and mechanisms that can be employed. These include; targeted incubation programs to stimulate innovation and focus resources to a particular aspect; industry supported funding mechanisms able to assess the social and environmental impact as well as the commercial potential; policy levers to create demand for recovered plastic; and deployment of existing economic tools, such as tax incentives and waste charges.

A systemic approach that internalizes the cost of waste management and pollution abatement into the price of plastic products was discussed and identified as a way to alleviate the price bias towards virgin plastic. The panel noted that private investment alone cannot change unhelpful habits nor unsustainable systems, but private investment coupled with public investment and efforts can. Today there is a lack of investment in the plastic circular economy, and there are inadequate collection systems to supply high quality feedstock for 2nd-life markets.

Optimism prevailed, with the panel agreeing that new blended finance mechanisms have the potential to de-risk investments in favour of innovation. The many parties interested in solving plastic pollution each have a way to stimulate business-led innovation. There is energy to catalyse change – and ultimately, circularity is the way forward.

Speaker:

- Regula Schegg, Managing Director Asia, Circulate Capital

Panellists

- Maurice Evers, De Paauw Recycling
- Simon Baldwin, Second Muse
- Doug Woodring, Founder, Plasticity and Sustainability Economist
- Helmut Schmitz, Head of Public Affairs, Der Gruene Punkt, The Green Dot
- Singh Intrachooto, Asst Prof Kasetsart University Faculty of Architecture
- Richard Jones, Senior Vice President, Indorama Ventures PCL

Facilitator

- Trish Hyde, The Plastics Circle and Plasticity"

Closing the day and setting the scene for the next, Kakuko Nagatani-Yoshida, UNEP, drew participants' attention to the criticality of business actively engaging in finding circular solutions for the plastic we use, to stem the flow of plastic to our oceans. She noted the natural flow of SEA of Solutions – with Day 1 featuring scientific evidence-based thinking and solutions, to Day 2 for business solutions and opportunities, on to Day 3 for localisation of solution for maximum impact.

DAY 3

Local solutions to plastic pollution



Overview

Day 3 of SEA of Solutions looked at solutions from communities and the local level. Sessions focused on promoting local solutions to plastic pollution through policies, technologies, research, innovation, actions and initiatives from national and local government, businesses, communities and youth.



"Every one of us has the power to make and create change. Today has been full of inspiring solutions to plastic pollution from the local community upwards. We must continue on this path together for less plastic wasted."

Day 3 M.C - Antoinette Taus, UNEP Goodwill Ambassador,
Founder - Planet CORA



Localizing multi-stakeholder coordinated actions for fighting plastic pollution 08.30-10.20

Information and presentations

This session presented country and community solutions to tackle plastic pollution. Public concern is growing about high waste generation and pollution in Malaysia. In response, the country is taking bold steps to harness market-based solutions to transform plastic markets and management. Vehicles for change include plastic bag levies, investment in research and development for alternatives, tax incentives, phasing out single use items in public agencies, and combatting the illegal trade of waste. Communication, education, raising public awareness, and collaboration with civil society groups are key drivers for behavioural change. Local governments can engage communities and consumers in plastic pollution action through local buy-back centres and waste banks, awareness-raising programmes for waste separation, use of communications technology to monitor littering, and cooperation with fisherfolk to collect litter in the marine environment. Inter-municipal cooperation on waste management is an effective solution, by creating economies of scale and reducing costs beyond major urban areas.

Speakers stressed that marine pollution issues have moved to the centre of public attention and social media; and that businesses, governments and consumers are now more engaged than ever. It is essential to raise the voices of youth and invest in environmental education for children, to catalyse the fundamental societal shift we need.

Moderator:

- Omar Siddique, Economic Affairs Officer, Sustainable Urban Development Section, ESCAP

Keynotes:

- Nagulendran Kangayatkarasu, Deputy Secretary General, Environment and Climate Change, MESTECC
- Hidetoshi Nishimura, President, Economic Research Institute for ASEAN and East Asia
- Alexander Rendell, Managing Director, EEC Thailand



“Bringing the powerful narrative of plastic pollution impacts to the local and individual level, mobilizes change and drives solutions.”
Nagulendran Kangayatkarasu, Deputy Secretary General, Environment and Climate Change, MESTECC

“Multi-stakeholder partnerships at the local level are part of the solution.”
Hidetoshi Nishimura, President, Economic Research Institute for ASEAN and East Asia (ERIA)

“Educating youth and inspiring hearts means we can work to solve the plastic pollution issue at the roots.”
Alexander Rendell, Managing Director, Environmental Education Centre Thailand (EEC)



Leading at the local level: youth and community solutions

10.45-12.15

Information and presentations

Community-based awareness-raising efforts, advocacy and innovations were showcased throughout this session – as well as the application of science and grass-roots knowledge. There was broad consensus on how education and awareness-raising is a vital component of the solution. It is crucial for citizens and civil society to lead from the local level and to upscale impact, whilst increasing pressure on governments and businesses, to implement change together. Effective communication of downscaled science and data can also support targeted interventions and solutions-thinking at the local level.

From youth engagement with major corporations and policy-influencing, to community building around the issue of waste reduction – the session focussed on eco-education, local level opportunities for intervention and scaling up impact. Ambitious and inspiring initiatives at the local and community level are focussing on solutions through strengthening policy, waste prevention, segregation, collection, organic waste treatment and education. Finding creative ways to convey vital messages through engagement and immersion was also discussed. Creative technology is being utilised by UNEP and others for conveying transformative messages on plastic waste reduction. Schools and universities play a vital role in changing perceptions and actions, with a reach way beyond the campus.

Moderator:

- Omar Siddique, Economic Affairs Officer, Sustainable Urban Development Section, ESCAP

Keynotes:

- Ralyn 'Lilly' Satidtanasarn, Bye Plastic Bags, Thailand
- Katy Waring, Co-Founder, Ecobeast Group
- Sujitra Vassanadumrongdee, Project Manager, Chula Zero Waste
- Kay Vasey, Chief Connecting Officer, Mesh Minds
- Wayne Nicholas Phillips, Lecturer, Mahidol University
- David Robinson, Director, Bangkok River Partners

“Our earth is our responsibility and we should not be afraid to change. We work with companies, retailers and local communities to ban single use plastics and provide eco-education, green guidelines for restaurants, eco-restoration and many other solutions.”

Ralyn 'Lilly' Satidtanasarn, Bye Plastic Bags, Thailand

“We believe in education, supporting grassroot projects, making science and research available for all, and nurturing communities. Individually we are one drop, and together we are an ocean.”

Katy Waring, Co-Founder, Ecobeast Group

“We are committed to carry messages to create awareness and engagement on the issue of marine plastic pollution through immersive tech, with the collaboration of UNEP and other partners. The power of technology can connect us and open up solutions.”

Kay Vasey, Chief Connecting Officer, Mesh Minds



Valuing waste: Business solutions 13.45-14.45

Information and presentations

The session shed light on business solutions to increasing the value of post-consumer plastics. In the face of flawed collection systems and underdeveloped waste infrastructure, partnerships between businesses, communities and local governments can transform plastic waste into a valued resource. Tried and tested local solutions driven by the private sector include establishing take-back systems to recover high value plastic feedstock, such as waste collection centres and waste banks. By educating and training local communities, youth and waste pickers on separation and collection of plastics, and partnering with high-end consumer brands for upcycling, these initiatives can cost-effectively divert plastic from landfills and the environment and provide income opportunities. Examples of innovative tools to develop a social plastic ecosystem in partnership with businesses include the use of applications and blockchain technology to facilitate the recovery of plastic waste, create transparency and a lucrative and safe reward system.

Speakers demonstrated that retailers can lead the way by removing, reducing, and redesigning products and packaging at the consumer and production. Key mechanisms for change include establishing localized collection systems for recycling and upcycling that actively engage consumers and investing associated cost savings from the phase-out of plastic bags in a shift toward recyclable and recycled products. Developing long-term commitments for sustainability with suppliers can incentivize and de-risk change to transform supply chains. Consumer reward schemes are a simple vehicle to promote the use of reusable packaging and bags and participatory activities to upcycle hard-to-recycle products for socially responsible causes can effectively change consumer mindsets. The speakers called for local government action to develop effective waste management systems and consumer demand to drive system change, and emphasized the willingness of businesses to join hands and be part of the solution.

Moderator:

- Esther An, Chief Sustainability Officer, CDL Singapore

Discussants:

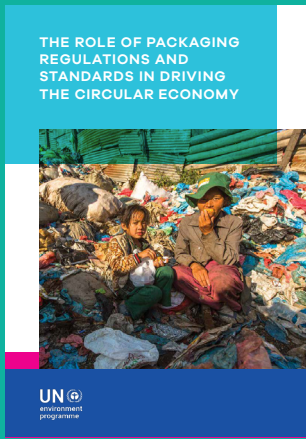
- Paola Cortese, Country Director, Plastic Bank, Indonesia
- Salinla Seehaphan, Corporate Affairs Director, Tesco Lotus
- Atip Asvanund, Head of Sustainability Development: Social Activities and Academics, Charoen Pokphand Group (CP)
- Siriporn Sriram, Programme Officer, IUCN Thailand

“Solutions mean finding value in plastic and valuing communities. Nothing has no value – communities and businesses are at the heart of change.”

Siriporn Sriram, Programme Officer, IUCN Thailand

“Consumers can drive change and companies who do good things will be rewarded. If we adopt change in our everyday lives, we do not even need laws to mandate change.”

Atip Asvanund, Head of Sustainability Development, Social Activities and Academics, Charoen Pokphand Group (CP)



Publication launch at SEA of Solutions 2019: The role of packaging regulations and standards in driving the circular economy

Read

The role of packaging regulations and standards in driving the circular economy, developed by UNEP and GA Circular, with support from the Government of Norway and the Government of Sweden, outlines the role of policy interventions to halt the rapid growth of packaging waste and to increase the circularity, in countries of the Association of Southeast Asian Nations (ASEAN) community.

It warns that limited policies on packaging and packaging waste in ASEAN countries and their weak enforcement are aggravating the problem. The report also points out that the community could benefit from a harmonized pan-ASEAN adoption of policies and standards concerning packaging reuse, packaging waste recovery & recycling, definitions related to packaging and packaging waste, labelling, and quality standards concerning recycling. Creation of technology hubs shared among ASEAN countries – for recycling or monitoring of plastic waste in trade – is also recommended.



Asia-Pacific Low Carbon Lifestyles Challenge

Read more

The session also launched the 2020 call for applications of the Asia Pacific Low Carbon Lifestyles Challenge. Calling all entrepreneurs, citizens, community leaders, activists, chefs, scientists and students – we invite you to apply for the Asia Pacific Low Carbon Lifestyles Challenge! We are looking for early stage start-ups that make sustainable goods and services more readily available. From low carbon mobility options, to products that reduce plastic waste, to solutions that reduce the carbon footprints of our lifestyles – pitch your solution to us for the chance to win US\$10,000, training, production of your very own video, business mentorship from industry experts, and lots more.

“Everyone in the Asia-Pacific region should have the opportunity to live a low-carbon and low-waste lifestyle.”

Janet Salem, UNEP



Localizing transformation: national and local government solutions

15.15-16.45

Information and presentations

This session looked at the requirements and opportunities to scale up current efforts at the community level to prevent plastic becoming waste. On the flip side, national policy-level interventions can incentivise businesses and community enterprises seek substitutes for plastics. National and local government working together on solutions is the key. National and local governments can partner by working together on multilevel partnerships on waste management, to ensure efforts can be replicated and are complementary. Examples were given of how local and national governments are already implementing successful and replicable initiatives, such as innovation in the recycling sector. Organizations such as Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) are bridging the national / local gap through working with both government partners and learning centres in East Asia to push for transformation. This effective partnership has led to the scaling up of local government marine debris initiatives, community-based garbage clean ups, waste collection and classification, and support for livelihood and social enterprise around marine plastics.

Other examples of successful and scalable locally/ municipally focussed initiatives include World Wide Fund for Nature (WWF) 'No Plastics in Nature' initiative and the 'Plastic Smart Cities' initiative – where cities make pledges to reduce plastic leakages and waste in their cities. There are even examples of 'EcoTowns' such as Kitakyushu in Japan. Various companies in Kitakyushu are developing and commercializing advanced technologies for waste plastic. This has national endorsement through the Japanese government '3R's' principles, and through support for renewable resource alternatives in the government's plastic resource recycling strategies.

Moderator:

- Pojanath Bhatanacharoen, Executive Director, Thai-Swedish Chamber of Commerce

Discussants:

- Aimee Gonzales, Executive Director, Partnerships in Environmental Management for the Seas of East Asia
- Yumi Nishikawa, Regional Plastic-Smart Cities Lead, SEA, WWF
- Kazuhide Umemoto, Deputy Mayor, Kitakyushu, Japan
- Singthong Nunnunsirisawat, Mayor of Wiang Thoeng Tambon Municipality, Chiang Rai

“Change is happening at the local government level because they are at the frontline of waste management and coastal management.”

Aimee Gonzales, Executive Director, Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)

“Our vision is for the Plastic Smart Cities initiative to be as inclusive as possible – letting new innovations come through and letting communities take action and identify their local solutions.”

Yumi Nishikawa, Regional Plastic-Smart Cities Lead, SEA, World Wide Fund for Nature (WWF)Group (CP)

DAY 4

Forum on plastic pollution solutions



Overview

Introductory film on SEA of Solutions 2019

The finale of SEA of Solutions 2019 was the Forum for plastic pollution solutions.

The culmination of a week filled with energy, action and debate, the Forum saw national government representatives, CEOs, trade representatives, academics, NGO changemakers, thought-leaders, government officials, youth and community leaders brought together for four discussion sessions covering key aspects of the plastic pollution conundrum: Trade in plastic waste, packaging and finance.

The Forum ended with a series of inspiring pledges, launching further collaboration and action, towards less plastic wasted.

High-level representatives from over 40 countries discussed the importance of immediate planning and action, and the necessity for cross-regional and intra-regional collaboration in plastic value chain transformation.

Key issues included the trafficking of used-plastics, especially topical since Asian countries have imposed bans on trafficking of waste. Mindset shifts and revalorization are required to find solutions to the challenges inherent in the plastic waste trade.

Success stories were shared, involving culture shifts, livelihood improvements, novel investment choices, policy reviews and dedicated education towards plastic consumption.

Recommendations from the Forum and the entire event include the following aspects:

- Private, public and non-governmental/intergovernmental sectors must work together to share knowledge and perspectives to create win-win scenarios.
- The value in plastics should be retained to incentivize the circularity of the plastic value chain.

The Forum was moderated by Veronica Pedrosa, Independent Broadcast Journalist.



Welcome messages



H.E. Varawut Silpa-archa, Minister of Natural Resources and Environment, Kingdom of Thailand demonstrated how Thailand is setting the agenda to manage plastic pollution, not only at a national level, but also regional. Thailand hosted the 5th ASEAN summit, which established a common regional framework on marine debris. In Thailand this has led to actions and solutions, including 48 retailers planning to terminate the distribution of single-use plastic bags in 2020, and a ban on single-use plastic bags in 2021. Effective awareness raising campaigns are also making a difference at the community level.

“The concept of 3 R’s might not be enough any longer. We need 4 R’s - rethink, reduce, reuse and recycling.”

H.E. Varawut Silpa-archa, Minister of Natural Resources and Environment, Kingdom of Thailand



H.E. Helen Ågren, Ambassador for the Ocean, Swedish Ministry for Foreign Affairs highlighted how solutions to tackle marine debris and plastic pollution are within our reach, and how this region is on a positive trajectory. She noted how strong policies mandating material recycling, combined with investment in infrastructure and facilities, are scalable in the ASEAN region.

“Here in this region, a strong foundation for accelerating action on marine plastic pollution prevention has been built.”

H.E. Helen Ågren, Ambassador for the Ocean, Swedish Ministry for Foreign Affairs



Lillygol Sedaghat, Spokesperson for Global Planet or Plastic Campaign, National Geographic presented a TED-talk style keynote, demonstrating the creative ideas and new technologies - across generations and nations - to tackle the challenge of plastic pollution. She explored four ‘Stories of solutions’ from the region, covering grassroots actions, locally applied science, business and innovation.



Video Message From:

Inger Andersen, Executive Director, UN Environment Programme emphasized in her video message that the situation on marine plastic pollution is a dire situation for us all, but we do have indeed a sea of solutions at our disposal. New packaging idea, cross-border collaboration and circularity built into our lives are some of the examples that need to be worked on by stakeholders. UN Environment Programme and the Coordinating Body of the Seas of East Asia (COBSEA) are proud to convening the partnership week of SEA of Solutions through the SEA circular project.



Dechen Tsering, Regional Director, UN Environment Programme, Regional Office of Asia and the Pacific reviewed three stimulating days of discussions at SEA of Solutions, covering science and research, the shifts made by the private sector to embrace circularity, and the ambitious and inspirational actions of youth and civil society – together bringing interesting and valuable solutions. She encouraged the strengthening of collaboration and partnerships – particularly between sectors – and called for an escalation of dialogue and action. She welcomed commitments from various sectors, towards real transformation and collective solutions.

“I look forward to plastic pollution prevention commitments, in which accountability is embedded, so that actions can lead to transformation.”

Dechen Tsering, Regional Director, UN Environment Programme, Regional Office for Asia and the Pacific



Take it back! Bring it back! Solutions for illegal trade in plastic waste

10.30–11.45

Information and presentations

Various policies addressing the transport of plastic waste have emerged in recent years. Solutions lie in reframing viewpoints on “plastic waste”. Transformational solutions can emerge through finding value in the recovery of post-consumer plastic. Finding value in plastic is a productive area for investment. Solutions ‘in country’ involve finding productive and lucrative ways to keep plastic ‘onshore’. Investment in nationally mandated recycling in ‘source’ countries is vital. This will support the eradication of the illegal trade in plastic waste.

Discussants from across the plastic value chain agreed that international and regional dialogues which lead to consensus on handling plastic waste are vital, to discourage the illegal trade in plastic. Policies, international treaties and market-based instruments are some of the tools which can tackle the international displacement of plastic waste. Valorizing post-use plastic at the local level is not only beneficial in reducing marine litter, but also land-based plastic pollution. This requires a shift in mindsets – whereby used plastics can become a valued commodity, rather than a transboundary challenge.

Moderator:

- Veronica Pedrosa, Independent Broadcast Journalist

Discussants:

- Huib van Westen, Coordinator, Regional Enforcement Network for Chemicals and Waste
- Carlos Martín-Novella, Deputy Executive Secretary, Secretariat of the Basel, Rotterdam and Stockholm Conventions
- Zuraini Ahmad Tajuddin, Senior Principal Assistant Director, Department of Environment, Selangor, Malaysia
- Benedicte Niel, Principal Agent, Global Pollution Enforcement Team, Environmental Security Programme, INTERPOL
- Naporn Popattanachai, Director, Centre of Natural Resources and Environmental Law, Thammasat University
- Louise Hardman, Founder & CEO, Plastic Collective

“The illegal trade in plastic waste has always existed, but there has been an important shift recently with increased regulation in some key import countries. Enforcement brings valuable protection in trade processes, but solutions won’t be found through enforcement alone.”

Benedicte Niel, Principal Agent, Global Pollution Enforcement Team, Environmental Security Programme, INTERPOL

“When policies are stricter, the plastic waste trade will inevitably shift. What’s needed is regional and global cooperation on illegal trade in plastic waste policies, so that the waste won’t just shift to the next country when regulations are implemented in one country.”

Huib van Westen, Coordinator, Regional Enforcement Network for Chemicals and Waste

“We seek cooperation with the exporting countries, so as to avoid eventual repatriation of waste. We are eradicating international pollutants of our land and marine environments.”

Zuraini Ahmad Tajuddin, Senior Principal Assistant Director, Department of Environment, Selangor, Malaysia

“Prior Informed Consent means that one operator in country ‘A’ needs to obtain an agreement with the importing country ‘B’, which certifies that the waste will be managed in a way which is environmentally sound.”

Carlos Martin-Novella, Deputy Executive Secretary, Secretariat of the Basel, Rotterdam and Stockholm Conventions

“We’ve got a fundamental flaw in our language; we’re calling it plastic waste. Every time we call it plastic waste, we don’t give it value. To change behaviour, we need to change the perceived value of materials. I call it resources; plastic resources”

Louise Hardman, Founder & CEO, Plastic CollectiveMalaysia

“We seek collaboration and consensus about the plastic materials which must be banned from entering our region. We need a proactive and global approach to combating plastic pollution in Thailand.”

Naporn Popattanachai, Director, Centre of Natural Resources and Environmental Law, Thammasat University



Introductory short film: Plastic Pollution Solutions: Trade in plastic waste

Watch Short Film

For decades, plastic waste has been a global commodity. But ‘recyclable’ plastic waste is often contaminated – it often isn’t recycled or reused. Meaning that plastic waste travels thousands of kilometers – to end up incinerated, dumped and leaked into rivers and sea. Countries in Asia are telling source countries to ‘take it back’. What’s the solution? We’re facing a crisis in the plastic waste trade. Seeking solutions requires fundamental changes throughout the entire plastic value chain.



I want to live forever: Solutions to close the loop for packaging, recycling and e-commerce

13.00-14.15

Information and presentations

Solutions presented in this session included; enabling circular economy approaches, and embedding environmental education to increase knowledge about plastic and recycling. Emphasis was laid on adding value to plastic resources through enforcement of regulations at the regional, national and local levels, through incentivizing the collection of plastic and regulating the consumption of plastic, including banning single-use plastics.

The need to substantially reduce the production of virgin plastics - to reduce and reuse plastics by industry and by businesses - was considered paramount. Forging collaboration and partnerships between various stakeholders - industry, businesses, civil society and governments - will be key to find a holistic, long-lasting and comprehensive way to responsibly consume plastic. Valuing plastic can be achieved through incentivising recycling schemes and finding better uses for recycled plastic. Comprehensive approaches must be employed to tackle plastic pollution through legislation and enforcement, such as a ban on plastic products designed for single-use. Businesses should design their packaging so that it can be reused, or composted. There is an imperative to foster dialogue between businesses, environmental activists and local governments, to make them part of the solution.

Moderator:

- Veronica Pedrosa, Independent Broadcast Journalist

Discussants:

- Richard Jones, Senior Vice President, Indorama Ventures
- Stein Hansen, Regional Director for Asia and the Pacific, UNIDO
- Paradorn Chulajata, Managing Director, Pre Pack Thailand and Chairman, Plastic Industry Club, The Federation of Thai Industries
- Laksmi Dhewanthi, UNEA Vice President, Senior Advisor to the Minister on Industry and International Trade, Ministry of Environment and Forestry, Republic of Indonesia
- Giuseppe Busini, Deputy Head of Mission, European Union
- Mark Fletcher, Head of Insights, Power Retail & Principal, Shop Science

"It is critical to reduce the amount of plastic entering the system, before we can tackle this challenge through increased recycling."

Laksmi Dhewanthi, UNEA Vice President, Senior Advisor to the Minister on Industry and International Trade, Ministry of Environment and Forestry, Republic of Indonesia

"We must connect the dots between communities and businesses - from one family to a small community to bigger networks and whole waste management infrastructure."

Paradorn Chulajata, Managing Director, Pre Pack Thailand and Chairman, Plastic Industry Club, The Federation of Thai Industries

“Transformational change is needed to foster solutions. Any trend would go against our efforts in the use of plastic if it’s encouraging business as usual.”

Sooksiri Chamsuk, United Nations Industrial Development Organization (UNIDO)

“E-commerce and digitalization can reduce plastic products and operationalize a volume-based waste management and collection system.”

Mark Fletcher, Head of Insights, Power Retail & Principal, Shop Science

“Education, but more importantly regulation, will have a lasting impact in combatting marine litter.”

Giuseppe Busini, Deputy Head of Mission, European Union Delegation to Thailand



Introductory short film: Plastic Pollution Solutions: Packaging waste

Watch Short Film

Packaging accounts for over a quarter of plastic used worldwide. Plastic has revolutionized the way we package food, distribute it and safely consume it. But South-East Asia has seen an explosion of plastic packaging waste. What’s the solution?



Money, money, money!: Solutions to address plastic pollution through finance for innovation and technology

14.15–15.30

Information and presentations

Solutions to plastic pollution through finance and innovation are about putting the right price on the market, policy reform and behaviour change. Scaling up new innovations, which are designed to replace, reduce, or reuse plastic, inevitably require finance and investment to reach the next level of impact. Organizations with environmental or social protection values may often seem as challenging investments to business investors, due to high capital intensity and high execution risk. Solutions to this challenge are two-fold: On the one hand, finance and investment organizations are seeking more nuanced and deeper knowledge and advice about how to conduct due diligence to holistically assess ‘environmentally sound’ investment opportunities. On the other hand, there is a need for financial capacity building within environmental organizations. Discussants called for more support to scale up innovations - potentially through ‘seed money’ which can be accessed by organizations with a goal to seek solutions to plastic pollution through interventions at key points along the value chain. If they can demonstrate success, doors could be opened which would invite big money to step in and impact to be upscaled. Environmental organizations and investors both need to take some risks to scale up impact.

Alternative opportunities for financing focus on the “polluter pays” principle. There are examples of businesses providing financial and livelihood support to wastepickers, or ensuring that collected waste is both remunerated and reused. There is money to be made in valuing plastic waste and enabling circular economy principles. Established businesses and financiers can provide stewardship – in terms of time, talent and treasure – to shift new technologies and innovations towards scalability and profitability.

Moderator:

- Veronica Pedrosa, Independent Broadcast Journalist

Discussants:

- Stephen Sikra, Senior Advisor, Alliance to End Plastic Waste
- Nalini Shekar, Co-founder, Hasiru Dala Innovations, Bangalore
- Casper Durandt, Chairman, PETCO
- Sharinee Shannon Kalayanamitr, Venture Partner, Gobi Partners
- Christophe Crepin, Practice Manager for East Asia and Pacific Environment, Natural Resources and Blue Economy, World Bank

“To businesses producing plastics, and those benefitting from recycling plastics - wastepickers are seeking livelihood support and social security. They should not be left behind.”

Nalini Shekar, Co-founder, Hasiru Dala Innovations, Bangalore

“PETCO financially supports the wastepickers with tools of trade, leading to 68% recycling of PET bottles. We believe that if you want to go quick, you go alone, if you want to go far, you go together.”

Casper Durandt, Chairman, PETCO

"It is important to provide not just money, but stewardship – in terms of time, talent and treasure."

Stephen Sikra, Senior Advisor, Alliance to End Plastic Waste

"Financial capacity building for environmental non-profits would greatly increase chances of investment. Investors are also seeking viable opportunities to invest sustainably and in a way that is environmentally sound."

Sharinee Shannon Kalayanamitr, Venture Partner, Gobi Partners

"Addressing plastic pollution is about putting the right price to the market and policy reform."

Christophe Crepin, Practice Manager for East Asia and Pacific Environment, Natural Resources and Blue Economy, World Bank



Introductory short film: Plastic Pollution Solutions: Finance, Innovation and technology

Watch Short Film

Plastic pollution costs everyone. And the environment pays the ultimate price. What if... less money was spent on inadequate management of this vast problem – and more on solutions!



Voices for Solutions to the Plastic Pollution Conundrum
16.00-16.45

Information and presentations

Throughout South-East Asia, there are countless initiatives and plans to avoid plastic becoming waste. This session heard from innovators, government officials, trade representatives, educators, civil society and youth. Each spoke of the importance of seeking the right solutions to the plastic pollution conundrum. Pledges were presented on ways to ensure less plastic is wasted. Some pledges called for a culture shift; new ways of dealing with and thinking about waste. Others offered investments into proven solutions and methods. Youth leaders pledged to continue pushing for a sustainable future and clean seas. The pledges were also presented in a film, synthesising all actions and commitments from leaders – many present at SEA of Solutions 2019, and others who were participating virtually and supporting the event.

[View SEA of Solutions Pledges film](#)



H.E. Samantha K. Jayasuriya,
 Ambassador of Sri Lanka to Thailand

“With all the boundless ‘serendipity’ Sri Lanka is blessed with, we are acutely aware of the impacts of marine plastic pollution. We therefore commit to full implementation of the 2017 policy initiative of banning selected polythene and polythene products. We also pledge to expand the ‘Beach Park Programme’ currently covering 90 kms long stretch of beaches that are being assigned to families living around to clean and handover the plastic wastes to recyclers. We pledge to encourage more PPP and multi-stakeholder engagements in innovative solutions, including producing microfilaments for cleaning tools, yarns for apparels (e.g. T-Shirts for Sri Lanka Cricket T-20, Galle-Dialogue 2019) from plastic wastes and promoting a circular economy.” (items, ecosystem management decision support).



Dr K. Nagulendran
 Deputy Secretary General (Environment and Climate Change), Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC)

“MESTECC will combat marine Litter through a multi-stake holder approach, promoting international/regional cooperation.”



Dr Tan Ching Seong,
 CEO, iCYCLE Malaysia, Terra Phoenix Technology

“iCYCLE will continue to work with local communities every day, to remove marine plastics and reduce plastic waste.”



Amb. Makarim Wibisono,
Senior Advisor for
Minister of Environment
and Forestry, Ministry
of Environment and
Forestry Republic of
Indonesia

“Indonesia attaches great importance to solving the problem of marine pollution from land-based activities. Indonesia has implemented the Presidential Decree No 83/2018 and the National Action Plan (NAP) to reduce plastic waste through various activities. Indonesia has been developing a Regional Capacity Center for Clean Seas (RC3S) in Bali, Indonesia. This centre would function as a hub for capacity building, knowledge management and awareness raising, supporting decision-makers as well as other stakeholders at regional, national and sub-national levels.”



Belinda Ford,
ASEAN Director of Public
Affairs, Communications
and Sustainability,
Coca-Cola ASEAN

“We pledge to immediately begin the switch from green to clear PET plastic bottles for Sprite™ starting in the Philippines and expanding to all markets in Southeast Asia through 2020. This will make these bottles easier to recycle and help accelerate PET collection rates. This is part of our ambitious ‘World Without Waste’ goal to help collect and recycle a bottle or can for everyone we sell in Southeast Asia and globally by 2030. We also pledge to use at least 50% recycled material in our packaging globally by 2030 and to make our packaging 100% recyclable by 2025.”



Tokuaki Shobayashi,
Deputy Director General,
Global Environment
Bureau, Ministry of
Environment Japan
(MOEJ)

“In June 2019, G20 countries shared “Osaka Blue Ocean Vision” aiming to reduce additional pollution by marine plastic litter to zero by 2050, and implementation framework to promote policies and measures by peer learning. Japan is determined to lead the world to realize the vision. Therefore, Japan government expands our comrades beyond G20, and supports ASEAN members regarding to countermeasures from establishment national plan to development waste management system and monitoring of marine plastic litter by such as Japan-ASEAN Integration Fund and ERIA regional knowledge center for marine plastic debris.”



Louise Mabulo,
UN Young Champion of
the Earth 2019

“It is a massive responsibility to be the Youth Representative at SEA of Solutions 2019. As a Young Champion of the Earth, standing in the place of the millions of youth worldwide, who will inherit this world you leave behind, I take it upon myself to ensure that you live up to the decisions, pledges, and solutions you made here today. I pledge to live, work toward, and advocate a world that asks for nothing less than a sustainable and circular economy by 2030.

At the onset of the Decade of Restoration, I pledge to execute my role in rethinking how we live our lives, consume and produce our food, and in spreading the word, so that we can replenish our earth, and ACT as Stewards of Creation. We are the Custodians of the future, and the decisions made today will directly impact my future, and the future of the many young people I represent. This is no easy task, and I will not rest until I can ensure that the future we deserve is restored to us.



Adrienna Zsakay,
CEO,
Circular Economy Asia

“Circular Economy Asia pledge to give all recycling materials to informal recycling collectors – or Resource Recovery Agents.”

I pledge that this unprecedented platform I’ve been given will not go to waste, but will hold you, me, and my generation accountable for our all actions. That we all understand the impact of our consumption and production habits.”



Anne Matthews,
Director of Administration,
UNESCAP

“At ESCAP, we support Asia-Pacific countries to close the loop on plastic waste through circular economy approaches. At our UN Compound in Bangkok, we banned single-use plastic and paper takeaway utensils in our compound. We REUSE, not DISPOSE.”



Yoshikazu Uehara,
Managing Director,
Mitsui Chemicals R&D,
Singapore

“In our 2025 Long-term Business Plan, Mitsui Chemicals Group aim to maximize products and services to achieve a low-carbon, recycling-oriented, and cohesive society in harmony with environment. We keenly recognize that climate change and plastic waste are serious issues thus integrated approaches will be taken to solve these together in total value chains. Currently, we are adopting multiple approaches, like chemical and material recycling, monomaterials, and bio-derived polymers along with scouting start-ups which deeply acknowledge and understand the issues. We will launch some projects to reduce plastic wastes through close relationship with international organizations including Alliance to End Plastic Waste.”



Alope Lohia,
Founder and Group
CEO, Indorama Ventures
Limited

“Indorama Ventures will invest USD 1.5 billion towards achieving our target of producing at least 750,000 tonnes of recycled PET per annum by 2025.”



Nalini Shekar,
Co-founder, Hasiru Dala
Innovations, Bangalore

“Hasiru Dala Innovations pledges to continue supporting the network of waste pickers for predictable livelihood and income, enabling their upward social mobility. Our efforts have till now empowered 22 waste-picker entrepreneurs, many of whom are able to file income tax returns, a first in their lives. We pledge to continue sustainable processing of waste generated by citizens. A total of 27,175 metric tons of waste have been diverted away from landfills and sent for responsible processing and scientific disposal. Hasiru Dala Innovations pledges to continue efforts to streamlined income source for waste pickers, increased environmental sustainability and advocacy for responsible consumption (targeting SDG 8, 11, 12).”



Salinla Sehaphan,
Director of Corporate
Affairs, Tesco Lotus

“Our packaging will be fully recyclable by 2025.”



Ennio Lamari,
Grin Green
International

“Grin Green International is a student-led social enterprise that strives for the eradication of single-use plastics in Asia. Every cause we advocate, event we organize, eco-merchandise we create, or educational initiative we carry out is and always will be carried out strictly by students. We believe kids have the power to change the world, and it is clearly our responsibility to do so seeing as how adults with the power to act are not treating the crisis with the urgency it deserves. Join us in demanding solutions from the corrupt or inept that run this planet NOW!”



Chayaporn Wattanasiri,
President, Mae Fah Luang University

“Mae Fah Luang University will be a driving force for the Greater Mekong Subregion by setting an example in Chiang Rai and transforming our campus into a living lab for circular economy. We will reduce plastics within our economy and Mekong River, as a tangible goal towards zero waste. We have set our milestone of 80% landfill diversion within 3 years, through research and innovations in reduction, reuse and recycling. Through collaboration with public and private partners, we will co-create new, different, and better solutions to limit plastic pollution for the greatest benefit of mankind - together.”



Esther An,
Chief Sustainability Officer, City Developments Limited

“CDI is committed to zero single-use plastic for our headquarters’ operations by 2030.”



Jerker Tamelander,
Coordinator,
Coordinating Body on the Seas of East Asia (COBSEA), UN Environment Programme

“COBSEA countries strive for regionally coherent science-based responses to reduce and prevent marine litter from land and sea.”



Antoinette Taus,
Founder, Communities Organized for Resource Allocation (CORA)
UNEP Goodwill Ambassador

“We at CORA believe in the power of education, inspiration and collaboration. With our team of dedicated volunteers, we pledge to work hand in hand with the Department of Education and the youth of the Philippines to create key partnerships and to bring climate action to schools across the nation.

We pledge to help educate the next generation in order to achieve our goals for a Clean Seas Pilipinas, focusing on proper waste management, recovery, and recycling, while building a meaningful circular economy and using the resources from these programs to help provide scholarships, rebuild schools and empower local communities. This we pledge for we believe that sustainable schools translate to sustainable families, and collectively we create - sustainable cities and communities.”



Vong Sok, Head of Environment Division, Sustainable Development Directorate, ASEAN Socio-Cultural Community Department, ASEAN Secretariat

“ASEAN joined hands and committed to collectively addressing the issue of marine plastic debris as stated in the Bangkok Declaration on Combating Marine Debris in ASEAN Region, which was adopted by the ASEAN Leaders at the 34th ASEAN Summit in 2019.”

Testimonies



“SEA of Solutions engaged local actors and cities. They are not only critical actors in the implementation of marine litter solutions but also in helping to shape national and regional policy actions to address the challenge. The event highlighted the urgent issue that scientific knowledge is not yet connecting with on-the-ground implementation of solutions to marine litter in cities. One solution presented is a “science for cities” interface to help address land based marine pollution. Cities are key for addressing land based pollution as local government maintains the assigned functional responsibility for waste management in each South-East Asian country. SEA of Solutions highlighted that the fragmentation and lack of coordinated efforts both at regional, national and local efforts needs to be addressed for more coherent efforts to address marine litter. We need more space for science, business and local actors to come together with a focus on multi-stakeholder action partnerships.”

Omar Siddique, Economic Affairs Officer, Sustainable Urban Development Section, ESCAP



“SEA of Solutions 2019 demonstrated a wide range of knowledge about plastic management, and how different parts of the world are contributing to solutions to this challenge. There was huge value in bringing together such a diverse audience, from experts in various fields, to youth. The younger generation have found very different approaches to raising awareness and we can work to encourage this.”

Alexander Rendell, Managing Director, Environmental Education Centre (EEC), Thailand



“Realising the scale and impacts of this serious issue is daunting, its impacts on women, livelihood and ecosystems. But meeting so many committed and driven people to tackle this head on, to commit, to change, to inspire, left me feeling grateful, encouraged and ready!”

Niall O’Connor, Centre Director, Stockholm Environment Institute



“The enthusiasm and commitment for change at SEA of Solutions 2019 was palpable. There is no question – we must stop plastic’s harm! Fortunately, there are many people and organisations in agreement, and through SEA of Solutions there is a vehicle for meaningful exchange. This was also the 13th Plasticity, and our long history of business-led solutions to plastic impacts has shown us the multiplying effect of meaningful collaboration – bring on SEA of Solutions 2020.”

Trish Hyde, on behalf of Plasticity

Solutions and recommendations



Conclusions

Solutions and recommendations

- Share the sense of urgency for an ecosystem of solutions, where large corporations and start-ups thrive. Call for industry-to-industry dialogue.
- Reconcile sustainability and marketability through scalable, cost-effective solutions. The market is ready, consumers are maturing, the financing is available.
- Circular economy is an economic means to address the environmental harm of plastic pollution, and as such needs environmental and economic representation to be effective.
- If circular is to replace linear, then there should be a focus on solving the barriers to circular economy, specifically the nurturing of second-life markets, encouraging design for recovery, and building a robust materials exchange infrastructure.
- Trade of used plastic is an essential part of a circular economy, and, if on fair environmentally-sound terms, transboundary trade could be considered.
- Create a level playing field for business – regional harmonisation on reporting, labelling, terminology, enforcement, process and standards.
- Strengthened national and international policy-making are key to industry reduction of single-use plastic.
- Cross-sectoral collaborations are vital to maximize existing plastic materials; stakeholders at each point in the plastic value chain must collaborate towards less plastic wasted.
- Strengthened municipal and national infrastructure and capacity building is required to enable and promote recycling.
- A better connection of scientific knowledge with on-the-ground implementation of solutions to marine litter is urgently needed.
- More data is needed on material flow analyses, hotspot evaluations and leakage control.
- Consumer awareness raising and education will support a societal transformation from over-reliance on single-use plastics.

There was consensus across all sectors that the goal is a circular economy for materials which can be produced, shipped, responsibly consumed and revalorized, with minimal negative environmental impact.

The substantial pledges received at SEA of Solutions 2019 were indicative of a groundswell of action and commitment in the South-East Asia region. Approximately 25 representatives of businesses, governments, academe, NGOs, CSOs, non-profits and youth spoke formally on behalf of their organizations. Pledges ranged from tangible commitments to eradicate single-use plastic to promoting circularity through supporting collection, retrieval, sorting and re-use of various plastics.

SEA circular will be following up on each and every one of the pledges voiced at SEA of Solutions 2019 throughout the forthcoming year, and will report back at SEA of Solutions 2020 on the progress on commitments and pledges.

The aim is to create a culture shift, where organizations can step up to the challenge, whilst benefitting from support, endorsement and a platform to lead a wider transformation.

Testimonies received from participants following the event, and through a post-event survey, indicated that providing a platform for local level, community-driven actions was valued – in particular at the city-level and through youth engagement. Approx. 75% indicated that SEA of Solutions 2019 was useful in terms of facilitating partnerships, providing networking opportunities or enabling connections and/or initiatives towards less plastic wasted. 90% of participants surveyed noted a satisfaction rate of 'Highly effective' or 'Effective'. 100% of participants surveyed indicated that SEA of Solutions 2019 provided new insights, information or knowledge which they could take forward or apply.

A list of topics was suggested for SEA of Solutions 2019 – in which the top five most popular were: Circular economy, Finance, innovation and technology, Local level solutions, Trade in plastic waste, Packaging waste.

The SEA circular initiative will take forward these recommendations and learnings from SEA of Solutions 2019, and work to develop market-based solutions to support the transformation of the plastic value. SEA circular will also continue to support and promote local, national and regional policy-making, to help eradicate marine plastic pollution at source.



SEA of Solutions 2019 was highly effective in underscoring the need for urgent action and collaboration, to find solutions to marine plastic pollution. Commitments made and actions demonstrated by businesses, governments, NGOs and CSOs were significant. Sessions and speakers at SEA of Solutions 2019 comprehensively explored how the issue is impacting economies, societies and ecosystems.

Yet the SEA of Solutions presented was also comprehensive and inspiring; youth actions, plastic alternatives, next-life enabling processes such as recycling, new methodology to study plastic hotspots, citizen science, and grass-root movements from communities, and many more.

Participants particularly highlighted the strength of the event in building partnerships and as a platform for discussion of nascent technologies and innovations.

Globally, there is an upsurge of awareness of the vast challenge of marine plastic pollution. This is translating to greater impetus for intervention at the policy level and increasing opportunities for business and innovation. The dynamism, optimism and enthusiasm displayed at SEA of Solutions 2019 is indicative of this strong commitment to transformation.



SEA of Solutions 2020 – Viet Nam

SEA of Solutions 2019 was privileged to have the valuable support and endorsement of the Ministry of Natural Resources and Environment, Royal Government of Thailand, as Host Country for SEA of Solutions 2019. The event benefitted greatly from the strong collaboration of the Ministry, under the leadership of Varawut Silpa-archa, Minister of Natural Resources and Environment.

Thailand as Host Country of SEA of Solutions 2019 will hand over to Viet Nam for SEA of Solutions 2020, confirmed in an announcement made by Viet Nam, at the conclusion of the event.

Thailand's tenure as 2019 Chair country ASEAN is concluding. With the ASEAN Chair being held by Viet Nam again in 2020, it is also appropriate that SEA of Solutions 2020 will look to Viet Nam for leadership, collaboration and endorsement.

The SEA circular / SEA of Solutions team look forward to another rich and collaborative event, providing a key platform for commitments, announcements, testimonials, discussions and meaningful partnerships towards joint action on marine plastic pollution prevention.



EVENT WEBSITE
sos2019.sea-circular.org
#SEAofSolutions

