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Agenda Item: 4a

**APEC Marine Debris Stakeholder Meeting:
Improving Data and Coordination and Developing
New Partnerships, 2–3 November 2018, Bali,
Indonesia**

Purpose: Information
Submitted by: VWG on Marine Debris



**22nd Chemical Dialogue
Santiago, Chile
24 February 2019**

APEC Marine Debris Stakeholder Meeting:
Improving Data and Coordination and Developing New Partnerships
2 – 3 November, 2018 Bali Indonesia

Executive Summary

Approximately 80 participants from government, academia, non-governmental organizations, multilateral development banks, impact investors, consumer goods companies, resin producers, treatment technology providers, and others convened in Bali, Indonesia November 2 – 3, 2018 to build on the 2009 APEC report on “[Understanding the Economic Benefits and Costs of Controlling Marine Debris in the APEC region](#)” and advance implementation of the [2016 APEC Policy and Practice Recommendations on Overcoming Barriers to Financing Waste Management Systems and Reducing Marine Litter](#) and share information on partnerships, practices, and policies to reduce litter leaking into our ocean. The meeting was organized by the U.S. Department of State, the U.S. Agency for International Development (USAID), the Trash Free Seas Alliance under the auspices of the APEC Ocean and Fisheries Working Group, Chemical Dialogue, and the Virtual Working Group on Marine Debris.

Overall Policy Messages

- There is not a one-size fits all solution, localized solutions will be required.
- Improving collection systems is critical.
- There are a range of policy interventions that can be used at various stages including: regulatory instruments (e.g., regarding circularity and recyclability targets); awareness and education campaigns; pricing or fiscal instruments; operational strengthening and the funding of solid waste management systems; subsidies or grants for innovation in packaging; recycling technologies; recovery of litter and clean-ups; and enforcement of existing laws.
- APEC has been a leader on sharing information regarding enabling policies, this should include: implementing the Policy and Practice recommendations; reducing legislative and regulatory uncertainty; developing the right incentives and risk allocation structures; and maintaining public sector commitment.
- When alternative products are introduced to replace materials such as plastics, the infrastructure must be in place to handle those materials; there are examples where the alternatives cause bigger environmental strains or exchange one environmental problem for another.

Incentives

- Incentives may include establishing recycling targets that include chemical recycling; including chemical recycling in renewable energy directives; creating markets to use recycled outputs; facilitating land concessions; and enabling or incentivizing the diversion of waste from landfills where appropriate.

Government Coordination

- Elements that may facilitate government coordination include regular meetings with a



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legislative mandate that relevant agencies participate.

Innovative Solutions

- New financing models: [Circulate Capital](#) and [Full Cycle](#)
- New technologies to convert waste into value: [Synova](#), [Plastic Energy](#)
- Technology incubator: [Second Muse](#)
- New technology for more effective waste collection: [Gringgo](#)
- Understanding how stakeholders are motivated: [Gone Adventurin and Misool Foundation](#)
- Empowering independent waste collectors: [Enda](#)
- Promoting thin film recycling: [WRAP Program and Yayasan Bina Karta Lestari](#)
- New models for community-based recycling: [CECR](#) and [Misool Foundation](#)
- Voluntary programs: [Trash Free Waters, Mother Earth, and Divers Clean Action](#)
- Finding innovative solutions for recycling: [USAID Municipal Waste Recycling Program](#)
- Development of Public Private Partnerships: [Yayasan Bina Karta Lestari](#) and [Packaging and Recycling Association for Indonesia for Sustainable Environment \(PRAISE\)](#)

Next Steps

- Expansion of VWG on Marine Debris
- Development of follow-up APEC study on marine debris



Meeting Summary

Session 1: Opening Remarks and Welcome

Min Kang, Project Overseer, U.S. Department of State welcomed attendees on behalf of the U.S. Department of State, U.S. Agency for International Development and the Trash Free Seas Alliance. He noted the need for regional action to address the challenge of marine litter and explained the objectives of the meeting. Specifically the meeting is aimed at promoting implementation of the 2016 APEC Policy and Practice recommendations on overcoming barriers to financing waste management systems and following up on the [2009 study](#) regarding the costs and benefits of controlling marine debris in the APEC region. Finally, the workshop seeks to develop new partnerships between economies, at various levels of government, and with advocates and city municipal leaders.

Consul General Mark McGovern, U.S. Consulate General Surabaya congratulated Indonesia for holding the *Our Ocean Conferences* and for the strong action and leadership Indonesia has shown to address marine litter. He explained that addressing the issue of marine debris has the full support of the U.S. Congress and President as shown by the recent signing of the [Save Our Seas Act of 2018](#). He noted that there is no single solution and that local solutions will be required for local circumstances but that the aim should be to stop marine litter at the source before it enters the marine environment.

Andreas Hutahaeen, Coordinating Ministry of Maritime Affairs, Indonesia highlighted the new commitments from the 2018 Our Ocean Conference and Indonesia's goal to reduce plastic leakage by 70% by 2025. Resolving the marine litter issue is a top priority for Indonesia with President Widodo issuing directives and authorizing Indonesia's National Action Plan. Data around marine debris needs to be improved. Indonesia is working with UN, World Bank and various Indonesian agencies and universities to tackle the issue. Indonesia has developed a program FOSMAR (Fostering Actions to Tackle Marine Debris and Microplastics) to build capacity and strengthen national universities to address some of the main barriers including: unintegrated waste management, limited awareness and cross-sectoral engagement, and lack of standardized detection methodologies. Indonesia's approach includes behavior change, reduced land-based leakage, reduced sea-based leakage, enhanced law enforcement and finance and research and development.

Carrie Thompson, USAID Deputy Assistant Administrator for the Bureau for Economic Growth Education and Environment noted that the key to addressing the flow of plastic waste into the ocean is to stop it at the source – in rapidly urbanizing coastal cities where waste management systems, infrastructure, and local capacity need strengthening. This effort requires coordination between local and national governments, community organizations/NGOs, schools, researchers, informal waste collectors, and businesses along the recycling value chain. Through the Municipal Waste Recycling Program, USAID is providing grant funding for 20 marine debris projects in Indonesia, the Philippines, Sri Lanka, and Vietnam. In addition, the recent fusion of the USAID Development Credit Authority and Overseas Private Investment Corporation (OPIC) into a U.S. International Development Finance



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Corporation will enable USAID to take advantage of financing options such as loans, loan guarantees, equity, and political risk insurance.

Session 2: Setting the Scene

Chever Voltmer, Plastics Director, Ocean Conservancy opened the session noting Ocean Conservancy's history with coastal cleanups. She also noted APEC's leadership on marine debris issues and the science that has been underpinning APEC's efforts.

Jenna Jambeck, Assistant Professor, University of Georgia reviewed current information regarding the import and export flows of plastic waste for recycling. She highlighted the important role that APEC economies play and the various interventions that can be made including reduction, redesign, improving waste management, and improving litter capture citing various examples of those interventions. She also reviewed some of the current global outreach programs including those from the U.S. Department of State, the World Bank, G7, G20, bilateral country engagements, prizes and global investment strategies. She concluded noting that a combination of policy, economics, and governance issues are involved which will require NGOs, academia, citizens, industry, and government working together to address material and product design, consumption, collection, treatment, and leakage issues.

Susan Ruffo, Managing Director, International Initiatives, Ocean Conservancy described Ocean Conservancy's mission and work on marine litter including the International Coastal Cleanups and the Trash Free Seas Alliance. APEC has been a key strategic forum in advancing regional efforts on marine debris through the Virtual Working Group on Marine Debris. Ms. Ruffo noted that a full range of solutions is required including reducing plastic in the waste stream, redesigning materials and products, increasing waste collection, improving recycling and cleaning up what is currently in the ocean. She highlighted the analytical basis for their work in the Stemming the Tide and The Next Wave reports and that OC has focused on collection systems as a key strategic aim. Previous APEC work including the need to systematically de-risk the waste management asset class; improve collection and sorting; improve the regulatory environment and increase the role of international finance institutions were also covered. Finally, the [APEC Policy and Practice Recommendations](#) endorsed by APEC in 2016 were reviewed.

Ryan MacFarlane, Coordinator, APEC Virtual Working Group on Marine Debris expanded on the previous descriptions of the group noting its role in sharing best practices and experiences. The group is developing tools to help economies implement the APEC Policy and Practice recommendations including a study on definitional barriers to developing waste management systems. The group is also collaborating with APEC Finance Ministers through the Asia-Pacific Infrastructure Partnership to identify and address financing barriers. Finally, the group is looking to augment its current network of government officials and private sector stakeholders to: share marine debris abatement strategies, policies, and best practices.

Session 3: Recap of the 2009 Report and Objectives for 2018-2019 Study and Report

Alistair McIlgorm, Professor, University of Wollongong, explained the background behind the 2009 APEC study which sought to improve the awareness amongst governments, communities, and industry within the APEC region of the economic implications of marine debris and provide guidance and practical advice on how to mitigate the impacts of marine debris. The study looked at the shipping, fishing, insurance, and tourism sectors and estimated the cost at \$1.265 billion per year. The new report will provide an updated assessment on the economic impacts of marine debris in APEC economies, identify urban marine debris “hot spots” that may benefit from targeted control interventions, and examine case studies on the technical effectiveness of marine litter devices such as river traps and harbor booms. A cost-benefit analysis of potential solutions and policy recommendations that may lead to reductions in the amount of litter leaking into the ocean will also be included.

Karen Raubenheimer, Professor, University of Wollongong described some of the case studies including leakage capture in Australia, collection and transportation case studies including: Ecobricks in the Philippines, fishing gear in Australia, and the ReciclApp in Chile which helps the wastepicker community. A recycling fund in Chinese Taipei was described as an example of innovative funding and Malaysia’s river of life project was described as an example of inter-ministerial cooperation. The case studies will include relevant information regarding the benefits, complexity, types and level of funding required as well as an evaluation of the potential for broader use in the APEC region.

Session 4: Individual Reports at Economy and Local Levels

Devi Dwiyantri, Ministry of Marine Affairs and Fisheries, Indonesia described Indonesia’s efforts to combat marine debris including work being done in collaboration with the World Bank to assess [hotspot cities in Indonesia](#), work on guidelines for coastal waste management, public campaigns and awareness, and technical support and research. Specifically, work is being done to identify the source and characteristics of marine plastic debris and microplastics pollution, modeling of marine plastics debris and microplastics in Indonesian waters, the impact of marine debris, and technologies to trap marine litter.

Ryuzo Sugimoto, Director, Global Environment Bureau, Ministry of Environment, Japan explained Japan’s approach to marine litter with the basic policy established by the central government and the local governments developing regional plans. Harmonized microplastic monitoring methodologies are needed which Japan is looking to address. Japan also described the support they provide to local governments for coastal cleanup which totals \$30 million per year. Japan is focusing on reducing land-based sources of marine litter through proper waste management, promoting 3R (reduce, reuse, recycle), sustainable consumption and production, and circular economy. Japan also engages in extensive international cooperation including bilateral engagements with Vietnam, the Philippines and others on waste management. Going forward Japan will host an environment/energy ministerial meeting under the G20 in 2019 and will continue to cooperate with Southeast Asian economies on waste management and ocean monitoring.



Kevin Kim, International Affairs Specialist, KOEM, Republic of Korea explained the roles of the various ministries and agencies with the Ministry of Environment overseeing management of land-based marine debris, the ministry of ocean and fisheries working on sea-based marine debris and implementing marine debris management policies and local governments implementing marine debris clean-up projects. The National Marine Debris Management Plan covers a 5-year period (currently 2014 – 2018). Some of the issues currently being evaluated include: improving the recycling system for marine waste resources, methods for increasing the collection rate of sea-based litter, developing local capabilities, and expanding research on microplastics. The APEC capacity building program on marine debris was also described which in its second phase is looking at more policy-oriented issues including the development of an APEC Marine Debris Management Guideline which will incorporate aspects of policy development, capacity building, research and innovation, as well as financing and private sector engagement.

Session 5: The Need for New Financing Measures

Chever Voltmer, Plastics Director, Ocean Conservancy opened the session noting that through the Next Wave analysis APEC recognized early on that financing was a key issue that must be addressed and that we need new models to bring together the various stakeholders.

Delphine Arri, Senior Environmental Engineer, World Bank noted that marine litter prevention is included as one of the aims for their multi-donor trust fund PROBLUE which was designed to support the Blue Economy. The World Bank's "What a Waste" report from 2018 indicated that by 2025 the economic cost of every ton of household waste that is not collected will be \$375. Solutions must be country specific, in Indonesia the World Bank has performed a marine litter rapid hotspot assessment and is working to improve solid waste management through a \$100 Million fund designed to leverage up to \$1.2 Billion in government spending. Preventative actions include regulatory instruments (e.g. regarding circularity and recyclability targets), awareness and education campaigns, pricing or fiscal instruments, and subsidies or grants for innovation in packaging, recycling technologies, recovery of fishing gear and cleanups. The role of DFIs include helping countries establish the policy environment and infrastructure to help reduce marine litter (e.g. waste management); support for knowledge exchange platforms; technical assistance; and financing including helping to mobilize private sector financing and sovereign bonds. Multiple solutions are possible, policy changes can be immediate, solid waste management is more medium term and innovation is typically longer term. The solutions may require country specific approaches.

Rob Kaplan, Founder and CEO, Circulate Capital described the rationale for establishing Circulate Capital to help address the financing gap between the small start-ups and the large-scale investments needed. Through their investments Circulate Capital looks to help convert waste plastic to revenue. Philanthropic capital is used at the start-up stage and combined with catalytic capital to help take the innovations to scale. The work will take a suite of solutions including public policy, corporate commitment, financial

incentives, and changes in behavior.

Stew Harris, Director, Marine and Environmental Stewardship, World Plastics Council described the World Plastics Council, that plastics provide significant benefits to society and are critical to achieving the sustainable development goals but that plastics in the environment is unacceptable. A study by Trucost found that the environmental costs of plastic use in consumer goods is 3.8 times less than the alternatives. Industry is committed to developing partnerships; contributing to research; improving the recyclability, recovery, and efficiency of plastic; providing catalytic capital to de-risk investments from other sources; and working to develop pilot projects to accelerate the development of waste management infrastructure where it is needed. Implementing the Policy and Practice recommendations, reducing legislative and regulatory uncertainty, developing the right incentives and risk allocation structures and maintaining public sector commitment are important to creating an enabling environment to develop solutions.

Robert Allen, Head of APAC, FullCycle explained FullCycle's vision of developing the world's largest stakeholder community to invest in carbon negative assets. Waste is estimated to be a \$220 Billion/year market with untapped potential. In developed countries there are relatively high disposal fees and relatively inexpensive power, while in developing countries there is relatively low disposal fees and relatively expensive power. FullCycle is investing directly in companies and using blockchain technology as an accelerator of participation and impact. They have a partnership with Synova which has technology to convert many types of waste into valuable energy and have plans to invest in 150 waste-to-energy plants by 2025. Financing will be done through traditional models, a tokenized security offering, and project level co-investment opportunities. The technology can also be used at a scale appropriate for small island communities.

Session 6: Creating Enabling Environments for Technology and Innovation

Simon Baldwin, Director, SecondMuse described Secondmuse's efforts to develop an innovation ecosystem to prevent plastic from entering the ocean. The process involves identifying and understanding the stakeholders, developing an incubation curriculum, building partnerships with the stakeholders and then helping innovators develop their ideas and build a revenue stream. This work will be done in partnership the Circulate Capital.

Sumangali Krishnan, Head of Research, Gone Adventurin' described some of the research and lessons they have learned through their projects which stretch from India to the Philippines. Within each country they create and map the waste flow and value collection points. They have found that a majority of waste ends up in low waste recycling streams destroying recycling value. They have also done a lot of work on behavioral issues to better understand how various stakeholders are motivated.

Cloe Ragot, Policy Advisor, Plastic Energy presented on chemical recycling technologies which can complement mechanical recycling particularly for low value, contaminated plastics and provide a long-



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term sustainable solution to the low-value plastic challenge. Some of the policy steps that can be taken to incentivize groups like plastic energy include establishing recycling targets that include chemical recycling; including chemical recycling in renewable energy directives; creating markets to use recycled outputs, facilitating the land concessions; enabling or incentivizing the diversion of waste from landfills where appropriate.

Febriadi Pratama, Co-founder, Gringgo described their pilot project in Denpasar to use technology to help waste collectors by providing information including prices for scrap materials. Their smartphone app helps organize operations and reduce inefficiencies (e.g. overlapping collectors) to make the collectors more productive. The pilot has resulted in more litter being collected and higher incomes for collectors resulting in an 80% increase in plastic recycling. Gringgo is in the process of a pre-award survey before receiving a USAID grant.

Day 2 -- 3 November, 2018

Session 7: Good Governance for Improving Solid Waste Management

Steve Morrison, US National Oceanic and Atmospheric Administration described the U.S. Marine Debris Research, Prevention and Reduction Act (reauthorized in 2018 as the Save Our Seas Act) which includes mandates to: (1) determine sources, prevent, reduce and remove marine litter; (2) provide domestic and regional coordination; (3) reduce impacts of lost fishing gear; (4) conduct outreach and education; (5) address severe marine debris events; and (6) engage internationally. The U.S. has established the Interagency Marine Debris Coordinating Committee (IMDCC) to coordinate responses, research priorities, monitoring techniques, education programs and regulatory actions. The group is chaired by National Oceanic and Atmospheric Administration; vice chaired by the U.S. Environmental Protection Agency and includes the U.S. Coast Guard, Department of State, U.S. Navy, Department of the Interior, Department of Justice and others. Recent areas of focus include: evaluating the cost of marine debris, emergency response, impacts of opening arctic sea routes, and increasing coordination of international engagement. Some of the elements that enable its success include: (1) legislative mandate to participate; (2) all relevant agencies are present at meetings; (3) reporting mechanism to the legislative body; (4) mechanism to identify new issues and opportunities; (5) required to have regular meetings.

Guilberto Borongan, Senior Program Specialist Regional Resource Center for Asia and the Pacific, Asian Institute of Technology explained AIT's role in developing the APEC Policy and Practice recommendations and the work being done in particular on recommendation #4 to streamline decision making.

John Rey Tiangco, Mayor of Navotas, Philippines (participated by video) and highlighted the issue of sachets in the environment. He noted that local authorities must also take ownership of the issue and find solutions. Educating the population as to why a particular policy is being adopted before the actual enforcement begins is also important.

Crispian Lao, Vice Chairman, National Solid Waste Management Commission, Philippines explained the Solid Waste Management Act in the Philippines which established a commission with government, private sector, and NGO participation. A challenge is that some of the key players are still missing and sometimes information is not disseminated widely enough. There is no mandatory fund and so waste management can depend on the priorities of local governments. Currently looking at ways to increase income for informal sector and transition them to the formal sector. There is interest in increasing investment from the private sector but a stable feedstock is needed and a lack of a definition for waste is impeding investment. The Philippines is currently looking at shifting from single use disposable plastics to single use recyclable plastics. Whatever products are introduced the infrastructure must be in place to handle those materials, there are examples where the alternatives cause bigger environmental strains.

Andrew Horan, International Environmental Protection Specialist, US EPA provided an overview of solid waste management in the United States. States and local government are the leads in determining the approaches to take for waste management with EPA providing central government level consistency through standards, guidelines, and technical support. Sustainable materials management is a systemic approach to using materials more productively over their entire lifecycle. The U.S. has focused on voluntary programs. The WRAP recycling program seeks to create opportunities for consumers to recycle plastic films. The Trash Free Waters program is a stakeholder-based, community driven approach to preventing land-based trash from entering watersheds. The U.S. is working on toolkit to help economies develop their own Trash Free Waters programs. Peru was given as an example of where such capacity building work was taking place.

Widita Vidyaningrum, Solid Waste Specialist & Consultant, USAID Municipal Waste Recycling Program described the waste management situation in Indonesia with approximately 60% of the waste consisting of organics and 14% plastic. There are questions about how waste is treated, particularly in smaller cities. Waste management is primarily the responsibility of the municipality and the private sector is typically not involved. The current strategy involves the use of landfill tipping fees and waste to energy facilities.

Nalim Mannapperuma, Director, Waste Management Authority, Western Province, Sri Lanka (*by video*) noted that waste management is overseen by the provincial authority, that 85% of waste is collected by the local government, that the public is actually happy to pay for waste disposal and that policies are changing to support the improvement and collection of rubbish.

Session 8: Public Private Partnerships

Clare Romanik, Senior Urban Specialist, USAID explained the role of USAID and the work of the [Municipal Waste Recycling Program](#) which seeks to fund organizations that can implement municipal waste recycling solutions with a focus on reducing plastics pollution of the marine environment in



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Indonesia, the Philippines, Sri Lanka and Vietnam. USAID is focusing its work in urban and peri-urban areas to get the biggest return on its investments in reducing marine debris. The amount of funding is \$5.5 million in grants. Thus far 20 projects have been funded.

Chandrarathna Vithanage, Senior Assistant Secretary General, Ceylon Chamber of Commerce

described (through a video message) how initial attempts by the government to ban and impose a tax on plastics were met with resistance from the private sector. Through a new USAID grant, the Ceylon Chamber of Commerce is convening relevant stakeholders to develop an evidence-based approach for formulating a new policy that all stakeholders can agree with and will be supported by the private sector.

Mignonne Maramis, Secretary General, PRAISE explained the mission of the Packaging and Recycling Association for Indonesia for Sustainable Environment (PRAISE) to increase awareness that each stakeholder is responsible for waste management in an integrated way; to strengthen the capacity of packaging waste management; and to enlist government, private and public sectors to take part in reducing the impact of packaging waste on the environment. The group focuses on advocacy, research and education, and partnerships and collaboration. The Bali Bersih Program involves a variety of government ministries and mapped the waste management ecosystem in Bali identifying hotspots along rivers and coastlines. Have a variety of activities across the value chain including the development of a hub for data and promoting research on waste management related topics.

Feri Prihantoro, Yayasan Bina Karta Lestari (BINTARI) explained BINTARI's role as a NGO focused on developing sustainable communities. They are working with Indofood to incentivize the collection of low-value, single-use packaging waste. Their challenge was households create limited amounts of packaging waste which isn't economical to transport. Working together through community waste banks, they addressed some of the efficiency and cost issues in a way that made sense for the local community. BINTARI has received a grant from USAID to carry out this work.

Lalith Wickramaratne, Deputy Municipal Commissioner (Engineering Services), Colombo Municipal Council reviewed how the city of Colombo is working to fund waste management. The city has outsourced half of waste management services to the private sector and half to the public sector. Staff salaries are reimbursed by the central government. Equipment and rest is from local revenues (property tax and other incomes, parking meters) = 79% of budget for solid waste management. The private sector is mostly involved in recycling.

Ly Nguyen, Executive Director, Center for Environment and Community Research (CECR) explained how waste management is handled in Vietnam. A family (\$2) or per capita (\$0.30) fee is charged on a monthly basis which covers part of the waste management costs, government budget covers the rest. The Vietnam Administration of Sea and Island (VASI) under the Ministry of Environment is developing a National Action Plan on Plastic Waste Management with the first consultation taking place in December and is scheduled to be finalized in the second quarter of 2019. CECR is working jointly with city environmental officials on a woman-led community-based pilot activity to separate plastic waste, other



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recyclables, and organic waste at the household level to reduce the waste going to city landfill. The project provides training for local leaders, technical solutions, and educational campaigns, facilitating rapid expansion of the “Clean House, Clean Hamlet, Clean Community” model. They are also doing studies on how thin plastic bags are used. CECR is supported through a USAID grant for this work.

Session 9: Inclusion in Waste Recycling Sectors

Sonia Mendoza, Chairman, Mother Earth Foundation described their work in the Philippines to change community behaviors on waste separation at source. Simple neighborhood material recovery facilities have been established which has helped to create jobs and increase compliance. The educational programs have reduced waste management costs (e.g. reduced the number of city trucks needed to collect waste) and reduced waste going to landfills.

Nguyen Thi Hoai Linh, Country Manager, Environmental Development Action in the Third World (ENDA) Viet Nam described their work on community-based waste management systems. The critical role of independent waste collectors (IWC) with local governments, the development of incentives for IWCs (healthcare and incentives for collecting low-value plastic), and the critical role of women in waste management were noted. It is difficult for IWCs to access social protections (e.g. health insurance) and thus it's often necessary to organize into cooperatives and unions. ENDA's work is supported through a USAID grant.

Swietenia Lestari, Divers Clean Action described their youth-led organization which conducts research regarding marine debris in Indonesia, works on advocacy campaigns, community development, and partnerships with industry (KFC and Danone). The group is currently working on developing waste banks, integrating independent waste collectors, and producing “Ecobricks.” These activities also serve to create employment opportunities for women and increase income. Divers Clean Action is in the process of a pre-award survey before receiving a USAID grant.

Hery Yusamandra – Misool Foundation, Indonesia described their efforts to create waste banks in West Papua. They currently have 3,743 individuals involved of which approximately 70% are women. The Misool waste banks will increase the amount of plastic being recycled from 85 metric tons (2017) to 175 metric tons (2018). Misool has a USAID grant to carry out this work.

Session 10: Breakout Sessions

Parallel sessions on public-private partnerships and supporting local governments and increasing coordination for improving solid waste management; inclusion in waste recycling (gender, youth, and civil society groups); platforms for technology and innovation; and data collection for informing policy were held. A number of issues were discussed including:

- Gender issues and how to empower women and enable them to be more involved.
- The importance of governments establishing enabling policy environments and infrastructure to support innovations.



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- Technologies (collection, segregation, treatment as well as those that can help influence behaviour and make products more efficient and recyclable).
- A recognition that more data is needed, there needs to be harmonized methodologies for collecting and using it, need more data on the role of rivers and the impacts of marine litter.
- The crucial role public-private partnerships have in improving solid waste management systems, i.e., collection, recycling, and waste treatment.

Conclusion and Next Steps

The meeting concluded with a summary of the presentations from the second day and a series of next steps for the development of the revised APEC study, this will include the study authors:

- confirming focal points within relevant APEC economy ministries;
- conducting interviews with government focal points, academia and other stakeholders;
- conducting a literature review to examine the sources of marine debris, identification of high-leakage areas/cities, and the contribution of the marine sector to APEC economies on a per economy basis;
- examining the costs of marine debris and poor waste management based on calculations from the latest publications;
- following up with government officials;
- researching case studies;
- drafting report and publication (June – December, 2019)

Additional Information

Presentations from the meeting may be found here:

<https://www.dropbox.com/sh/4pfria2qvzyyqg4/AADOYs8zoWkl-UO5VhBJ-4yQa?dl=0>

Photos from the meeting may be found here:

https://www.dropbox.com/sh/qj2qhatstlq090m/AAA6_xQS8f9gZ5F0hynPlwzVa?dl=0

Annex A: Meeting Agenda

Annex B: Speaker Biographies

Annex C: Meeting Participants