

Expert Group Meeting on Policies for Resource Circularity and Solid Waste Management to Accelerate National to Local Progress on the Sustainable Development Goals

21–23 November 2023, Incheon, Republic of Korea

Meeting Report

Executive Summary

The United Nations Office for Sustainable Development hosted an Expert Group Meeting from 21-23 November in Incheon on waste management and resource circularity to orient the development of a future policy support initiative on the topic. The meeting brought together experts from across the UN system institutions leading on waste policy support and global experts from academia, government and civil society to discuss key topics related to strengthening evidence-based policymaking and data collection for informed future strategies on the topic. This report details the proceedings.

The following summarizes key outcome messages from the meeting:

Extraction of resources globally is unsustainable. The rate of global natural resource exploitation is untenable, as is the current trajectory of production and consumption rates and waste disposal.

Many countries have implemented waste legislation, but context-specific policy support for implementation at the local level is needed. Different countries have varying definitions within the sector, differing waste compositions for rural and municipal areas, split ministerial responsibilities – including budget management, and cultural sensitivity which need to be considered.

Limited waste management data exacerbates the situation as many countries do not know the size of the problem nor who is most affected by poor waste management. In addition, there is a clear lack of harmonization on definitions across countries requiring common global approaches to unify data collection and policy support.

Developing circular economies is vital. The lifecycle approach, from cradle to grave (or cradle to cradle) is a key underlying principle for resource circularity and sustainable solid waste management. Value chain analysis and easy source segregation need to be part of the process.

Stakeholder coordination between national and local governments, private sector businesses, and the scientific community are key to achieve successful programmes.

The informal sector, which often has low visibility, is a vital stakeholder for solid waste management in developing countries. Ways need to be found for the sector to be integrated into policy support systems, policies, data collection, value chains, and strategies.

Implementation of policies and strategies is a significant challenge in many developing countries. To assist the deployment process, development and implementation of behaviour change strategies require more focus in many countries.

Population and consumer spending dynamics need to be considered. The middle class in the Asia-Pacific Region with their increased spending power, is projected to significantly increase waste generation and composition in the future. This will need to be reflected in the interventions put in place to future proof waste management.

Background

The United Nations Office for Sustainable Development (UNOSD-UNDESA) aims to develop a Policy Support System that can bridge data, technical and capacity gaps to advance resource circularity in solid waste management across developing countries and support waste management plans at the national and local levels. This work builds on the engagement of UN DESA on zero-waste through the International Partnership for Expanding Waste Management Services of Local Authorities (IPLA) from 2011-2015 and responds to resolution A/RES/77/161 Promoting zero-waste initiatives to advance the 2030 Agenda for Sustainable Development.¹

With the support of the Republic of Korea's Ministry of Environment and the Korea Environment Corporation (K-eco), an expert group meeting was held to serve as a consultative platform upon which to tailor future research and policy support according to the present needs, challenges and accelerated solutions that can measurably improve national to local solid waste management and resource circularity in developing countries (please see [Annex 1 bookmark://bookmark1/](#) for the list of participating institutions and countries).

Day 1 (21 November 2023): [Introductory session](#)

[Presentation on background paper](#): Ms. Emily Carroll, Policy Development and Coordination Expert, UNOSD, DSDG, UNDESA

In preparation for the meeting, a background paper was prepared as a basis for the opening discussion. The paper benefited greatly from comments received from the participants during the plenary discussion and the updated version can be accessed [here](#). The comments that could not be included will be incorporated directly into a research publication that will be informed by both the background paper and the outcomes of the Expert Group Meeting (please refer to the background paper). The publication will address policies to achieve resource circularity and solid waste management and for the acceleration of national to local progress on the SDGs.

Session I: The Sustainable Development Goals and solid waste management – Achieving a zero-waste society – Progress and challenges.

Moderator: Ms. Maya Valcheva, Programme Officer, Green and Circular Economy Learning, UN Institute for Training and Research (UNITAR)

Presentations:

- [SDG Indicator 11.6.1 on Municipal Solid Waste \(MSW\) Monitoring and Progress Towards Zero Waste](#) - Ms. Francesca Calisesi, Associate Officer of Solid Waste, Urban Basic Services Section, Global Solutions Division, Urban Practices Branch, UN Human Settlements Programme (UN-Habitat)
- [Lessons Learned from Multilateral Engagement for Zero-Waste - IPLA and Regional 3R & Circular Economy Forum in Asia-Pacific](#) - Mr. Choudhury Rudra Charan Mohanty, Environment Programme Coordinator, UN Centre for Regional Development (UNCRD), DSDG, UN DESA
- [Regional progress on Zero-waste and Circular Economy in Asia and the Pacific](#) - Ms. Maria Hughes, Associate Expert on Circular Economy, UN Environment Regional Office for Asia and the Pacific

Main outcomes

Mismanaged waste has severe consequences; disproportionately affecting the poor and contributing to greenhouse gas emissions and plastic pollution, it impacts all 17 of the Sustainable Development Goals.

Developing circular economies is vital, as only a small portion is currently circular, resulting in significant implications for GHG emissions, pollution, and overall Earth System health. With more

¹ A/RES/77/161 Promoting zero waste initiatives to advance the 2030 Agenda for Sustainable Development <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N22/756/33/PDF/N2275633.pdf?OpenElement>

data now on how humanity is impacting planetary boundaries, it is clear that humanity has exceeded the planetary boundary related to environmental pollutants with strong links to weak waste management for 'novel entities' especially plastics.²

Limited waste management data is a key challenge, particularly in low- to middle-income countries, and presents significant challenges in decision-making and planning, as a result, the expansion of adequate waste management services. In addition, harmonisation of waste management definitions across countries remains a challenge to achieve comparability between jurisdictions. This lack of harmonisation impacts on the ability of countries to work together to achieve change at the sub-regional and regional levels.

Insufficient legal frameworks further hinder the development of waste management strategies and where legal frameworks are present, implementation is the main challenge. Implementation at the local level is difficult to coordinate as local government structures and mandates differ between countries. In addition, financial and institutional constraints require more effective use of funds in delivering waste management services.

The informal sector's role is often overlooked but can be engaged through tools like UN HABITAT's Waste Wise Cities Tool (<https://unhabitat.org/wwc-tool>) for Waste Characterization Assessment and Tailoring.

Partnerships, particularly with the private sector, are crucial due to their technological capabilities. Creating resource-resilient cities and greening Small and Medium-sized Enterprises (SMEs) play key roles in sustainable waste management. Implementing upstream measures like resource management and extended producer responsibility (EPR) is essential to address waste issues.

Lastly, **population and consumer spending dynamics should be taken into account**. The increasing spending power of the middle class in Asia and the Pacific is projected to significantly impact waste generation in the future. Increasing incomes will also result in changes to waste composition which will need to be reflected in the interventions put in place to future proof waste management.

Session II: Governance and policy structures for solid waste management

Country Presentations:

Morocco: Ms. Bouchra Fari, Head of Foresight Service, Ministry of Energy Transition and Sustainable Development of Morocco

Ethiopia: Mr. Kassahun Tsegaye Demessa, Senior Environmental Compliance Expert, Federal Environment Protection Authority of Ethiopia

Ghana: Mr. Godfred Fiifi Boadi, Senior Programmes Manager, Solid Waste Unit, Ministry of Sanitation and Water Resources, Ghana

Indonesia: Mr. Medrilzam, Director of Environment, Ministry of National Development Planning (BAPPENAS) of Indonesia, and Ms. Asri Hadiyanti Giastuti, Planner, Ministry of National Development Planning (BAPPENAS) of Indonesia

Cambodia: Ms. Sokun Meas, Chief of Office, Ministry of Environment of Cambodia, and Ms. Sansreypov Ngan, Chief Officer, Department of Solid Waste Management, General Directorate of Environmental Protection, Ministry of Environment of Cambodia

Vietnam: Mr. Chinh Nguyen The, Institute for Strategy and Policy on Natural Resources and Environment (ISPONRE), Ministry of Natural Resources and Environment, and Ms. Hoang Thi Hien, Researcher on Environment and Sustainable Development, ISPONRE, Ministry of Natural Resources and Environment.

² <https://www.stockholmresilience.org/research/research-news/2022-01-18-safe-planetary-boundary-for-pollutants-including-plastics-exceeded-say-researchers.html>

Main outcomes

Key governance and policy structures from national to local levels for solid waste management are in place or being developed at the country level. Morocco is an example of a country that has advanced strategies that are currently being successfully implemented, including strong Public-Private Partnerships that have facilitated the implementation and eco-tax on plastic, whereby shifting responsibility to producers and generating financing for investment into waste management infrastructure. Cambodia is developing a legal framework that promotes MSWM, 3R implementation and a Circular Economy including the National Platform for Solid Waste Management nationwide. While in Ethiopia, there is an emphasis on institutionalizing integrated solid waste management (ISWM) systems in various policy and strategy documents, as well as enhancing service standards and establishing strong financing mechanisms. In Indonesia there is an emphasis on shifting towards a circular economy and on the implementation of a Farm to Fork strategy for food loss and waste. Overall, the importance of coordination and the involvement of multiple sectors in waste management efforts is key.

Policies and legislation are key for SWM, but implementation is a challenge. While countries may have fully developed policies in place, Ghana highlighted the gap between policies and their implementation, this included a lack of clear behaviour change strategies and the need to explore different communication channels for various stakeholders in waste management.

The involvement of national and local governance in promoting sustainability and waste management goals is vital. Countries highlighted the need to develop legal frameworks and implement initiatives at the local level (such as zero-waste cities in Cambodia), and the encouragement of public-private partnerships to support the achievement of zero-waste objectives.

There are many gaps and challenges in achieving zero-waste and more integrated solid waste management. Countries highlighted the lack of financial resources for policy implementation, the need for coordinated behaviour change interventions, and the absence of treatment and disposal standards³. There is an urgent need for data harmonization, guidelines for public-private partnerships, and incentives for private sector engagement.

Session III: Measuring what we waste (a) – Reviewing data gaps for solid waste management.

Moderator: Ms. Emily Carroll, Policy Development and Coordination Expert, UNOSD, DSDG, UN DESA

Presentations:

- [Review of data gaps for ISWM \(Integrated Solid Waste Management\)](#) – Mr. Jeff Seadon, Seadon Consulting
- [WaCT and Data Gaps](#) – Ms. Francesca Calisesi, UN HABITAT
- [Filling data gaps in SWM through ISWM and participatory planning](#) – Ms. Aditi Ramola, Technical Director, International Solid Waste Association (ISWA) (*virtual*)
- Mr. Kabir Arora, Asia Pacific Coordinator and Advocacy Lead, International Alliance of Waste Pickers

Main outcomes

Quality not quantity of data should be assessed when examining data availability. A data reliability hierarchy can assist with this assessment. The hierarchy ranges from international organizations

³ An example is found in Ethiopia. In 2018, Ethiopia constructed the Repi waste-to-energy plant in Addis Ababa at the Koshe dumpsite, which is expected to incinerate up to 1400 tonnes of waste per day (roughly 80% of Addis Ababa's waste) and provide 30% of the city's household electricity needs, generating approximately 50 MW of electric power. However, the plant is not fully operational owing to a lack of sophisticated technology, skilled labor, appropriate raw materials and financial resources.

as most reliable, then national governments, and local governments to academic journals, businesses, blogs, and others.

There are 12 main data gaps in waste and resource management that have been identified internationally. These include accuracy, destination of waste, full cost accounting, informal sector, indicators, information management systems, longitudinal data, monitoring and reporting, standard definitions and classifications, ward level data (socio-economic), waste collection emissions, and waste other than municipal solid waste.

Data availability is limited which poses significant challenges for most waste-related SDG indicators. Data enables informed decision-making, trend identification, resource allocation, and other essential aspects of waste management. Comprehensive data also contributes to an enabling environment to attract investments.

Data collection from the informal sector is key to closing data gaps. The sector is an integral and essential part of waste management in developing countries and legislation needs to be developed with the sector in mind. People within this sector may have experienced much trauma and lack trust, and therefore be unwilling to engage with formal data collection methods. Therefore, a high level of sensitivity is needed throughout data collection processes and in any eventual integration into the formal sector. It should also be noted that *informal* does not mean *illegal*. UN-HABITAT and the ILO are leading the way with the work of this sector.

Session IV: Measuring what we waste (b) - Generating evidence and challenges at national to local level

Moderator: Ms. Chaela Shin, Associate Research and Policy Development Expert, UNOSD, UN DESA

Presentation:

- [Outcomes of K-Eco research: Sustainable Development Policy Support Questionnaire On waste](#)
- Mr. Jung-Mok Yang, policy research consultant, K-eco

Participants were presented a draft questionnaire for countries to self-assess their progress on resource circularity and solid waste minimization. Once fully developed, the self-assessment questionnaire will be part of the Policy Support System for solid waste management. The consolidated comments and suggestions to develop the survey further are listed in [Annex 2](#).

Session V: Dialogue – Taking stock of evidence-base and data gaps

Moderator: Ms. Maya Valcheva, UNITAR

- Group discussion
- Reporting back to plenary

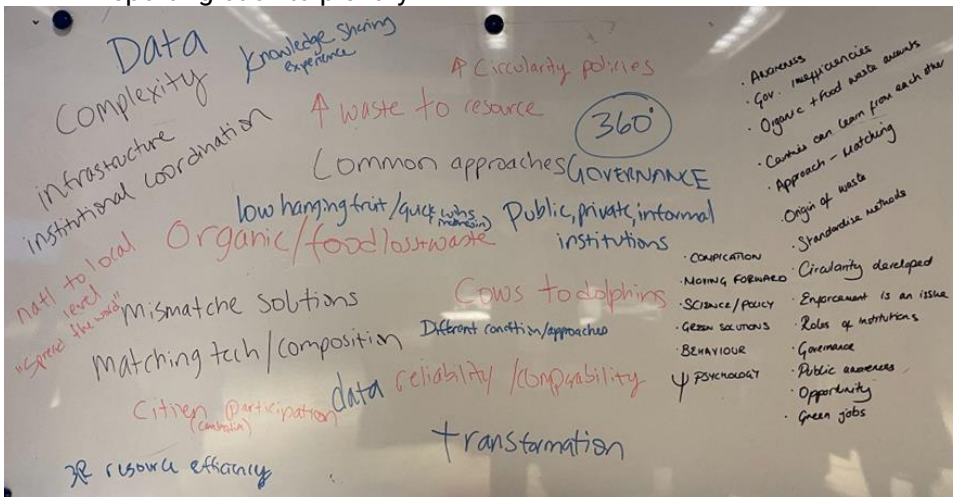


Figure 1: Key words from the group discussion

Main outcomes

There is a high degree of complexity to implement solutions at the national and local scales. Determining the origin of waste is a starting point to finding solutions. Whether waste generation occurs at the design stage of a product or service, the manufacturing stage, or retail or use phases all influence the eventual solutions. Solutions require institutional coordination where public, private and informal initiatives work together. This requires roles and responsibilities to be clearly defined. At the implementation end, it has to be taken into account that citizen composition varies dramatically, depending on income levels, cultural context and even the urban/rural settings. All these variations present different behaviours, and therefore, different approaches are needed to facilitate change.

Policy development to roll out circular initiatives at the local level developed at national level require collaborative governance processes. Collaboration needs to result in common approaches to increase circularity policies to enable a transformation at the local and national levels. A mixture of **quick wins and long-term programmes** is needed to maintain momentum. However, it should be noted that government inefficiencies combined with a lack of enforcement can result in policy failures. However, the benefits of pursuing circular initiatives and green solutions providing green jobs, are significant in improving citizens' lifestyles. Typically, a good place to start is to consider **food loss and waste** as this is one of the major waste streams, that causes health issues but can be turned into a circular resource with relatively low-level infrastructure.

Data reliability and comparability is critical to enable appropriate infrastructure development. Data is required to determine which solutions, and at what scale, can be implemented to reduce, reuse, and recycle waste. Absence of data that is fit for purpose results in **mismatched solutions** to reduce waste and can actually increase waste. **Data must also be comparable** to other similar situations and obtained from reliable sources, so that performance and improvements can be easily measured.

Communication is key to taking stock of the evidence base. Countries can learn from each other and can benefit from knowledge sharing. At the country level, sharing knowledge at the national level, between institutions at the national and local levels, and at the local level is key to coordinating waste reduction. **Targeted campaigns** associated with programmes have been found to be more effective than general public awareness programmes. In addition to top-down communication, bottom-up feedback is also needed to ensure inclusiveness and for gauging effectiveness.

Day 2 (22 November 2023)

Session VI: Crafting success cases in policy and practice for zero-waste society

Facilitator: Ms. Maria Hughes, UNEP

Presentation:

- Designing Zero-Waste Success Cases: Challenges, Opportunities, and Sustainable Financing Schemes – Mr. Dukwoo Jun, Circular Economy Lead, Global Green Growth Institute

Main outcomes

The Global Green Growth Institute (GGGI) approach zero waste from an industrial development market perspective. Their focus is on promoting sustainable economic growth while reducing waste and environmental degradation. According to GGGI, designing zero waste success cases requires considering key factors:

Value chains, landfill mining, source segregation, stakeholder analysis, PPPs, and waste reduction incentives are crucial elements in designing successful zero-waste systems. Understanding material flows, promoting resource conservation through landfill mining, encouraging source segregation, and analysing stakeholders' needs inform funding strategies and financing mechanisms. Collaboration with private entities enhances innovation in waste management through PPPs, and establishing incentives encourages waste producers to invest in sustainable practices.

It is essential to identify the real waste producer. Identifying the primary contributors to waste generation helps target interventions, allocate responsibilities, and implement effective waste reduction strategies.

Emerging solutions for developing countries include green hydrogen from biogas, which offers energy and emissions reduction benefits, and biochar projects that combine waste management with carbon market strategies, where these are established, for sustainable outcomes. The chemical recycling of plastics is also a potential solution, however, in some cases, it may be more beneficial for developing countries to process and sell plastic waste to other countries – such as selling plastic pellets to Europe – rather than investing in chemical recycling infrastructure. This approach allows countries to deal with intermediate products and explore potential markets for plastic waste.

Session VII: Examining key barriers and the policy support tools and capacity development needed to facilitate evidence-based policymaking in the waste sector.

Facilitator: Ms. Maya Valcheva, UNITAR

Presentations:

- [Barriers for effective solid waste management](#) – Ms. Aditi Ramola, Technical Director, International Solid Waste Association (ISWA) (*virtual*)
- [Technology Transfer for Zero-Waste and Barriers for Adoption](#) - Mr. Choudhury Rudra Charan Mohanty, Environment Programme Coordinator, UN Centre for Regional Development (UNCRD)
- [The challenges of incineration and viable alternatives for zero-waste in a developing country context](#) – Ms. Doun Moon, Global Lead, Global Alliance for Incinerator Alternatives (GAIA)

Main outcomes

Key barriers include knowledge and data gaps, lack of infrastructure, and technical issues such as outdated technology, collection segregation, limited recycling and processing, and inadequate data management and monitoring hinder progress. **Policy-related challenges** include unclear policies, enforcement gaps, limited stakeholder engagement, and the need for incentives and penalties focused on waste reduction and adaptation to local conditions. **Financial barriers** arise from budget constraints, affordability of waste management fees, lack of funding, and high operational costs. **Social and cultural factors**, such as public awareness, cultural attitudes, community participation, education, and inequitable impacts on marginalized communities, also play a role. Overcoming these challenges requires integrated policies, culturally sensitive education, engagement with community leaders, technological innovation, and a collaborative approach between local and national governments.

Transitioning from linear to circular approaches necessitates the development of appropriate technologies. A strong policy and regulatory framework, as well as an integrated collaboration between local and national governments, are essential. Government incentives and adequate financing are necessary to support waste management initiatives. Building capacity through training programs and establishing a science-policy-business interface is also crucial. The involvement of technology transfer managers with both technical expertise and knowledge

impartation skills is essential. A comprehensive approach incorporating nature-based solutions and derived solutions is recommended. In addition, exploring circular economy opportunities in biomass utilization, considering nanotechnology, and employing green chemistry practices are important facets of integrated waste management. Lastly, integrating Industry 4.0 with the circular economy presents significant opportunities for sustainable waste management practices.

Incineration poses several challenges, and alternative methods should be considered. While incineration can be an appealing solution to waste management, it is an inefficient process that destroys valuable materials. Unseparated waste with high moisture content has a low calorific value, leading to suboptimal incineration outcomes, therefore this is not a suggested solution for developing countries, where organic waste can account for higher percentages of waste composition. Moreover, incineration generates toxic ash, with 25-30% of the waste resulting in air pollution and ash disposal. Additionally, there are environmental justice concerns, for example, a significant number of waste incinerators in the USA are in low-income or minority communities. In Europe, there have been reports of contamination in eggs and vegetation near waste incinerators. Alternatives such as source separation and decentralized systems offer more sustainable waste management options that can minimize the drawbacks associated with incineration.

Session VIII: Group session on barriers for zero-waste policy implementation

Facilitator: UNOSD and UNITAR

- Introduction to the policy cycle and zero-waste goals
- Group exercises – identifying barriers for policy effective policy design on zero-waste
- Reporting back to plenary

Session IX: Policy support in practice and policy design tools for resource circularity from national to local level

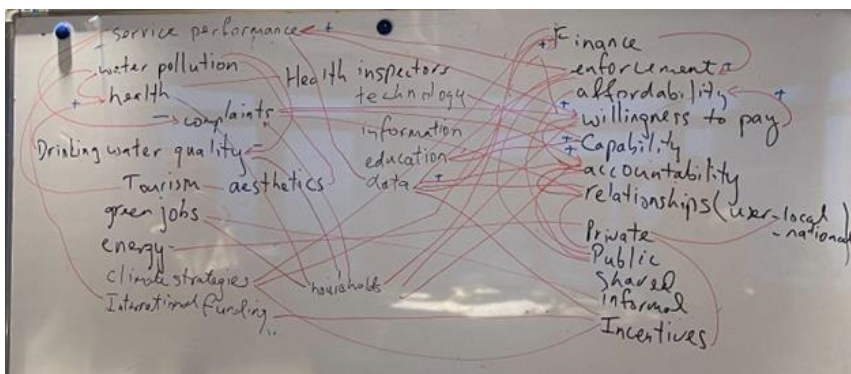


Figure 2: Systems Map developed using a systems thinking approach (work in progress)



Figure 3: *Developing the Systems Map*



Figure 4: *Presenting the outputs from the Design Thinking Group*

Facilitator: Ms. Sara Castro de Hallgren, UNOSD

- Introduction to exercise - i) systems thinking, ii) design thinking and iii) behavioral informed methods for solid waste policy design
- Group exercise on “Applying systems thinking, design thinking and behavioral informed policy design”
- Division into groups i) systems ii) design iii) behaviour
- Reporting back

Main outcomes

Systems thinking demonstrated that actions (or lack of actions) can have far reaching consequences. Examination of drivers as shown in Figure 2 for solid waste policy design showed

that some elements were key (nodal points) to unlocking pathways to change (feedback loops). While the figure above was a work in progress, the top three nodal points were the involvement of **households, data provision, and willingness of consumers to pay for services**. Second to those nodes were **service performance, enforcement** of provisions, and **relationships** between users, local and national governments. **Feedback loops** can reinforce (positive) or oppose (negative) actions. An example of how feedback loops can work is shown in Annex [3](#).

Design thinking demonstrated that solid waste policy design can have significant positive impacts on the informal sector, especially women and particularly mothers. Government support is needed to assist mothers working as waste-pickers in the informal sector (e.g. in Cambodia) to enable formal education opportunities for their children. That support can be targeted towards **programmes and policies** that reduce environmental pollution. **Training** and **technology support** for the informal sector, which can be provided by scholarships to workers, are important factors to build capacity and gives them social protection.

Behavioural-informed methods showed that stakeholder (general public, national and private sectors) perceptions focussed on waste as the problem, rather than an opportunity to turn into new resources. Behavior change is needed to change this biased view of waste. Gaps to develop solutions are primarily in **capacity, political willingness**, and the **challenges to develop solutions at scale**. Government and the private sector need to **cooperate** to provide **incentives** to convert waste to **resources** and link to the **local marketing** of goods and services to change local views of waste from trash to resource

Session X: Open discussion and feedback on designing and operating circular waste management systems from national to local level

Facilitator: Ms. Maya Valcheva, UNITAR

- Country representatives dialogue
- Feedback and brainstorming in plenary

Main outcomes

Capacity development at local government level is critical to move towards a circular economy. Capacity can be built by encouraging local government to work with **local business** and **technical expertise**. **Training in waste accounting** will enable business cases for moving towards a circular economy to be more robust. **Cost benefit analyses** at the ward level can provide better waste management solutions.

A targeted approach to elements of waste management at the local level will advance the circular economy. A movement away from **product** to **primary industry focus** can improve resource efficiency. Programmes targeted at the higher levels of the waste management hierarchy (**reduction** and **reuse** through **repairability** and **refurbishment**) will provide significant waste reduction potential. **Sharing experiences** and providing **technical support** are important to unlock community support. To ensure the longevity of these programmes development of **sustainable financial instruments** (for example, eco-taxes that are ringfenced for waste minimisation) is fundamental to provide conditions for the success of programmes.

Inclusion of the informal sector is essential for a cohesive programme to reduce waste. Each situation is different, so an appropriate **societal context** is needed when including the sector. In many cases, waste **products** are purchased door-to-door by the informal sector, while **packaging** is retrieved for free from landfills, making it much harder to ascribe a value to packaging. The value differential results in difficulties in making **recycling financially viable**.

Closing Session - Collective impact for resource circularity and next steps

Facilitator: Ms. Sara Castro de Hallgren, UNOSD

Plenary on next steps for global to national policy support for accelerating a zero-waste society – towards a roadmap.

Main outcomes

The Expert Group Meeting brought together a motivated group of professionals who can influence and provide support across regions and countries and can help to bridge the gap between national policies and local actions. Mobilising the resources available from the attendees can aid in bridging the identified gap. At the local level, the **informal sector** provides a significant contribution to waste management, but **data** on this sector is very scarce.

Nine countries are nominated to be hub countries from which to develop regional programmes. As well as the represented countries (Cambodia, Ethiopia, Ghana, Indonesia, Morocco, and Vietnam) Bolivia, Honduras and Timor-Leste are included as the mission-driven group to achieve good results and give **impact in circularity** by starting to change the waste mindset. Development of capacity building in the public, private and informal sector will be essential task to achieve the goals of the programme. Development of a **policy support platform** will give integration and global coordination in terms of data gaps and policy tools.

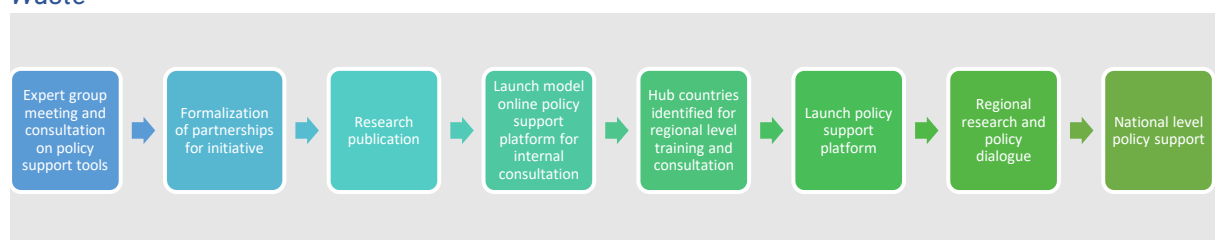
Conclusion

- The rate of global natural resource exploitation is unsustainable, and production and consumption rates cannot continue on the current trajectory.
- Policy support needs to be context specific and account for; varying definitions within the sector, differing composition of waste by country and rural-municipal areas, split ministerial responsibilities – including for budget management, and cultural sensitivity.
- The lifecycle approach is a key underlying principle for resource circularity and sustainable solid waste management.
- Coordination between key stakeholders in national and local governments, businesses, and the scientific community are necessary for successful programmes.
- The informal sector is a vital part of SWM in developing countries, the sector needs to be treated with sensitivity and integrated into policy support systems, policies, and strategies.
- Implementation of policies and strategies is a main challenge in many developing countries, and the development and implementation of behaviour change strategies requires more focus in many countries.

Next steps

The roadmap below will continue to be followed. The immediate next step will be the development of a publication based on the initial background paper and the outcomes of the EGM.

Roadmap for Consultation on Policy Support for Integrate Solid Waste Management towards Zero-Waste



It is important to note that each stage of the roadmap will encompass a consultative and iterative process with relevant stakeholders and member countries to ensure the development of an appropriate, user-friendly, and robust online policy support platform that will address a current gap in policy support tools.

Partnerships will be key to the development of the system and hub countries will not only act as pilot countries representing global regions but will become leaders in their respective region to disseminate the knowledge and encourage use of the system. The hub countries themselves will have the advantage of providing direct and early inputs into the system's development through regional workshops and will have system use before wide-scale rollout and, therefore, early questionnaire scores that can potentially be used as leverage for financing from local authorities or even international organizations.

Lastly, the final step of the roadmap *National level policy support* refers to how the system will become an integral part of UNOSD-UN DESA's existing workstream to ensure continued close partnerships with member countries and benefits of the policy support platform into the future.

Day 3 (23 November 2023): Field Trip

On the final day of the Participants visited the Sudokwon Landfill Site and the National Institute of Biological Resources. Pictures from the trip can be seen in Annex [4](#).

Post-event survey

A survey was undertaken to assess the participants' perception on the overall quality and usefulness of the event, including suggestions for improvement for future events. Please refer to Annex [5](#) for the survey results.

Annex 1: Final meeting agenda and participants' list

Agenda

Day 1 Tuesday, 21 November 2023	
Time	Sessions
8:30 – 9:00	Registration
9:00 – 9:30	<p>Opening remarks and welcome Moderator: Ms. Sara Castro De Hallgren, Sustainable Development Officer, UNOSD, DSDG, UN DESA</p> <p>Mr. Chun Kyoo Park, Head, UN Office for Sustainable Development, Division for SDGs, UN Department of Economic and Social Affairs (UNDESA)</p>
9:30 – 10:10	<p>Introductory session Moderator: Ms. Sara Castro de Hallgren, UNOSD</p> <p>Introduction of the participants</p> <p>Presentation on background paper - Ms. Emily Carroll, UNOSD, DSDG, UNDESA</p> <p>Plenary discussion</p>
10:10 – 10:30	Coffee and Networking Break
10:30 – 11:20	<p>Session I: The Sustainable Development Goals and solid waste management – Achieving a zero-waste society – Progress and challenges Moderator: Ms. Maya Valcheva, Programme Officer, Green and Circular Economy Learning, UN Institute for Training and Research (UNITAR)</p> <p>SDG Indicator 11.6.1 on Municipal Solid Waste Monitoring and Progress Towards Zero Waste - Ms. Francesca Calisesi, Associate Officer of Solid Waste, Urban Basic Services Section, Global Solutions Division, Urban Practices Branch, UN Human Settlements Programme (UN-Habitat)</p> <p>Lessons learned from multilateral engagement for zero-waste - IPLA and Asia-Pacific 3R Forum - Mr. Choudhury Rudra Charan Mohanty, Environment Programme Coordinator, UN Centre for Regional Development (UNCRD), DSDG, UN DESA</p> <p>Regional progress on Zero-waste and Circular Economy - Ms. Maria Hughes, Associate Expert on Circular Economy, UN Environment Regional Office for Asia and the Pacific</p>
11:20 – 12:00	<p>Session II: Governance and policy structures for solid waste management (Country presentations / 10 mins per country)</p> <ul style="list-style-type: none"> – Morocco – Ms. Bouchra Fari, Head of Foresight Service, Ministry of Energy Transition and Sustainable Development of Morocco – Ethiopia <ul style="list-style-type: none"> ○ Mr. Kassahun Tsegaye Demessa, Senior Environmental Compliance Expert, Federal Environment Protection Authority of Ethiopia <p>Questions & answers</p>

	<p>Guiding questions:</p> <ul style="list-style-type: none"> - What key governance and policy structures focus on waste management from national to local levels? - What is the role of national to local governance in achieving zero-waste in the country context? - What are the gaps and challenges among planning and policy for achieving zero-waste and more circular and integrated solid waste management? - What national advancements or plans are in place to remedy these challenges and gaps if any?
12:00 – 13:30	Lunch Break
13:30 – 15:00	<p>(Cont.) Session II: Governance and policy structures for Solid waste management (5 Country presentations / 10 mins per country)</p> <ul style="list-style-type: none"> - Ghana <ul style="list-style-type: none"> o Mr. Godfred Fiifi Boadi, Senior Programmes Manager, Solid Waste Unit, Ministry of Sanitation and Water Resources, Ghana <p>Q&A</p> <ul style="list-style-type: none"> - Indonesia - Mr. Medrilzam, Director of Environment, Ministry of National Development Planning (BAPPENAS) of Indonesia - Ms. Asri Hadiyanti Giastuti, Planner, Ministry of National Development Planning (BAPPENAS) of Indonesia - Cambodia - Ms. Sokun Meas, Chief of Office, Ministry of Environment of Cambodia - Ms. Sansreypov Ngan, Chief Officer, Department of Solid Waste Management, General Directorate of Environmental Protection, Ministry of Environment of Cambodia <p>Q&A</p> <ul style="list-style-type: none"> - Vietnam - Mr. Chinh Nguyen The, Institute for Strategy and Policy on Natural Resources and Environment (ISPONRE), Ministry of Natural Resources and Environment - Ms. Hoang Thi Hien, Researcher on Environment and Sustainable Development, ISPONRE, Ministry of Natural Resources and Environment
15:00 – 15:15	Coffee and Networking Break
15:15 – 16:15	<p>Session III: Measuring what we waste (a) - Reviewing Data Gaps for Solid Waste Management</p> <p>Moderator: Ms. Emily Carroll, Policy Development and Coordination Expert, UNOSD, DSDG, UN DESA</p> <p>A review of data gaps for ISWM – Mr. Jeff Seadon</p> <p>WaCT Tool and data gaps – Ms. Francesca Calisesi, UN HABITAT</p> <p>Ms. Aditi Ramola, Technical Director, International Solid Waste Association (ISWA) (<i>virtual</i>)</p> <p>Mr. Kabir Arora, Asia Pacific Coordinator and Advocacy Lead, International Alliance of Waste Pickers</p> <p>Guiding questions:</p> <ul style="list-style-type: none"> - What data gaps exist on solid waste management in the context of SDGs and to advance zero-waste on a global scale? - Are there data gaps on socioeconomic or demographic factors that influence waste generation patterns?

	<ul style="list-style-type: none"> – Are there specific types of waste that are currently not being accurately measured or accounted for? – What data gaps exist particularly with informal waste sector and what proxy indicators can be used to estimate the informal sector's role?
16:15 – 16:45	<p>Session IV: Measuring what we waste (b) - Generating evidence and challenges at national to local level Moderator: Ms. Chaela Shin, Associate Research and Policy Development Expert, UNOSD, UN DESA</p> <p>Outcomes of K-Eco research: Data collection for evidence-based solid waste management, Mr. Jung-Mok Yang, policy research consultant, K-eco</p> <p>Division into groups for Policy Support Questionnaire Review Guiding questions:</p> <ul style="list-style-type: none"> – Does the questionnaire cover all data gaps and key areas for national to local level policy design? – What are other methods of capturing data gaps for policy on ISWM? – Do you foresee any specific challenges in providing the information requested in the questionnaire?
16:45 – 17:30	<p>Session V: Dialogue – Taking stock of evidence-base and data gaps Moderator: Ms. Maya Valcheva, UNITAR</p> <p>Group discussion</p> <p>Reporting back to plenary</p> <p>Guiding questions:</p> <ul style="list-style-type: none"> – What patterns can be observed from the country presentations in the previous sessions on the relationship between national to local governance, policy and data for solid waste management? – How can national governments ensure that waste data collected from different localities is standardized and comparable? – What other policy support tools could strengthen national to local data for zero-waste and key SDG targets?
18:00 – 20:00	Welcome reception
<p>Day 2 Wednesday, 22 November 2023</p>	
Time	Sessions
8:30 – 9:00	Registration
9:00 – 9:10	Recap of Day 1 and Introduction of Day 2 Sessions
9:10 – 10:00	<p>Session VI: Crafting success cases in policy and practice for zero-waste society Facilitator: Ms. Maria Hughes, UNEP</p> <p>Presentation – Designing Zero-Waste Success Cases: Challenges, Opportunities, and Sustainable Financing Schemes Mr. Dukwoo Jun, Circular Economy Lead, Global Green Growth Institute</p> <p>Q&A</p> <p>Plenary discussion – lessons learned Guiding questions:</p> <ul style="list-style-type: none"> – What success factors determine zero-waste in practice?

	<ul style="list-style-type: none"> – What is the role of policy in ensuring zero-waste in practice?
10:00-10:45	<p>Session VII: Examining policy support tools and capacity development to facilitate evidence-based policymaking in the waste sector Facilitator: Ms. Maya Valcheva, UNITAR</p> <p>Barriers for effective solid waste management – summary presentation by Ms. Aditi Ramola, Technical Director, International Solid Waste Association (ISWA) (<i>virtual</i>)</p> <p>Technology transfer for zero-waste and barriers for adoption - Mr. Choudhury Rudra Charan Mohanty, Environment Programme Coordinator, UN Centre for Regional Development (UNCRD)</p> <p>The challenges of incineration and viable alternatives for zero-waste in a developing country context, Ms. Doun Moon, Global Lead, Global Alliance for Incinerator Alternatives (GAIA)</p> <p>Q&A</p> <p>Takeaways for capacity development</p> <p>Guiding questions:</p> <ul style="list-style-type: none"> – What barriers can be observed in designing and implementing effective solid waste management? – What are some examples of how these barriers can be overcome in practice?
10:45-11:00	Coffee break
11:00-12:00	<p>Session VIII: Group session on barriers for zero-waste policy implementation Facilitator: UNOSD and UNITAR</p> <p>Introduction to the policy cycle and zero-waste goals</p> <p>Group exercises – identifying barriers for policy effective policy design on zero-waste</p> <p>Reporting back to plenary</p> <p>Guiding questions:</p> <ul style="list-style-type: none"> – Based on the previous sessions, what barriers can be observed in designing and implementing effective solid waste management policies? – What country-specific barriers exist and how do these differ according to stakeholders, government levels, and rural vs. urban areas?
12:00 – 13:00	Lunch Break
13:00 – 14:30	<p>Session IX: Policy support in practice and policy design tools for resource circularity from national to local level Facilitator: Ms. Sara Castro Hallgren, UNOSD</p> <p>Introduction to exercise - i) systems thinking, ii) design thinking and iii) behavioral informed methods for solid waste policy design</p> <p>Group exercise on “Applying systems thinking, design thinking and behavioral informed policy design”</p> <p>Division into groups i) systems ii) design iii) behavior</p>

	Reporting back
14:30 – 15:00	Coffee and Networking Break
15:00 – 16:00	Session X: Open discussion and feedback on designing and operating circular waste management systems from national to local level Facilitator: Ms. Maya Valcheva, UNITAR Country representatives dialogue Feedback and brainstorming in plenary
16:00 – 16:45	Closing Session - Collective impact for resource circularity and next steps Facilitator: Ms. Sara Castro Hallgren, UNOSD Plenary on next steps for global to national policy support for accelerating a zero-waste society – towards a roadmap
16:45 – 17:00	Concluding remarks

Day 3 Thursday, 23 November 2023	
Time	Program
9:00 – 9:30	Registration
9:30 – 12:00	Field trip to SUDOKWON Landfill Site
12:00 – 13:00	Lunch
13:00 – 15:00	Field trip to the National Institute of Biological Resources
15:00 – 16:00	Return to the Oakwood Premier Incheon Hotel

Expert Group Meeting list of participating institutions and countries

1. UN Institute for Training and Research (UNITAR)
2. UN Environment Programme (UNEP) Regional Office for Asia and the Pacific,
3. International Alliance of Waste Pickers
4. UN Human Settlements Program(UN-Habitat)
5. UN Centre for Regional Development (UNCRD)
6. Seadon Consulting
7. Ministry of National Development Planning of IndonesiaMinistry of Energy Transition and Sustainable Development of Morocco
8. Ministry of Environment of Cambodia
9. Federal Environment Protection Authority of Ethiopia
10. Ministry of Sanitation and Water Resources of Ghana,
11. Institute of Strategy and Policy on Natural Resources and Environment of Vietnam
12. Ministry of Natural Resource and Environment (MONRE) of Vietnam

13. Global Green Growth Institute (GGGI)
14. Global Alliance for Incinerator Alternatives (GAIA) Asia Pacific
15. World Bank
16. *(online) International Solid Waste Association (ISWA)*
17. *(online) UN University Institute for the Advanced Study of Sustainability (UNU-IAS)*
18. Korea Environment Coporation (K-eco)
19. United Nations Office for Sustainable Development

Annex 2: Policy Support System draft survey – consolidated participant comments

The following suggestions were provided by the participants in order to enhance the draft survey.

Status and Capacity

- Definitions for some of the terms (types of waste, origin of waste, waste treatment)
- No account for baseline or comparison system to interpret the data.
- Rural or urban data (geographical climate index) sub-regional differences (humidity)
- Questions addressing the human resources involved in waste management, for example, education levels
- Involvement of the informal sector

Finance and policy

- Only related to budget – some definitions need to be clarified.



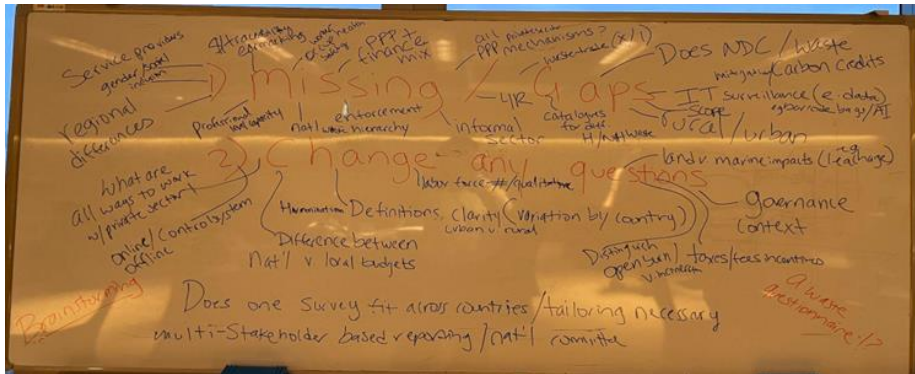
- Budget differentiation on national and local governments (defining what is meant by it and who is responsible) – difference every time on national and local governance.
- Sources: informal sector
- Public costs may not always just be public but also private financing
- May be difficult to have one questionnaire, we could have a template but tailor it to each country or income level.
- Only one question on private sector, so you can attract private capital through global cooperation.
- Do you have any plan or mechanism to work with the private sector – stakeholder parts.

Environment, Engagement and Public Oversight

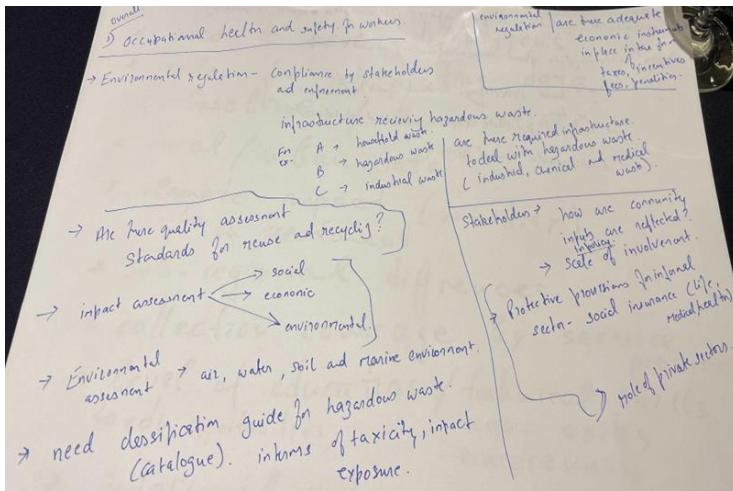
- Compliance of stakeholders
- Infrastructure for waste
- Is there a catalogue for toxicity and exposure.
- Look at social and economic environment too and marine environment.
- How are community inputs reflected in policy?
- Are there provisions for the informal sector (insurance etc.)
- Are there adequate economic instruments for taxes fees and incentives
- Environment – is EPR in place and how is it functioning.
- Occupational health and safety of workers
- Need to reflect other types of waste management recycling etc.
- Distinguish between incineration and open burning.
- Is there a national waste hierarchy that you are following?
- Service providers gender/disabilities.
- Different institutions may be responsible for different parts of the survey, how do you deal with this? National committee?
- Scope of the data being provided, which areas. Definitions.
- How many people are employed by the sector – formal and informal.

The summary board and participant group notes are as follows:

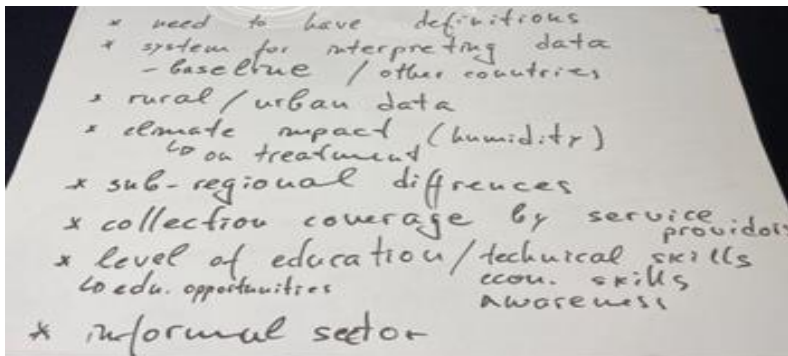
Summary Board:



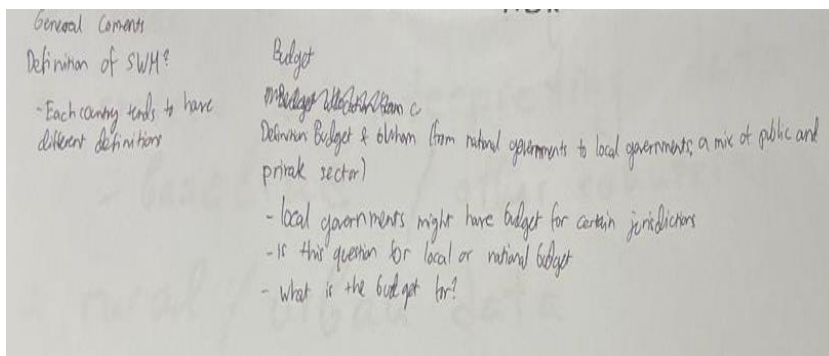
Group 1:



Group 2:

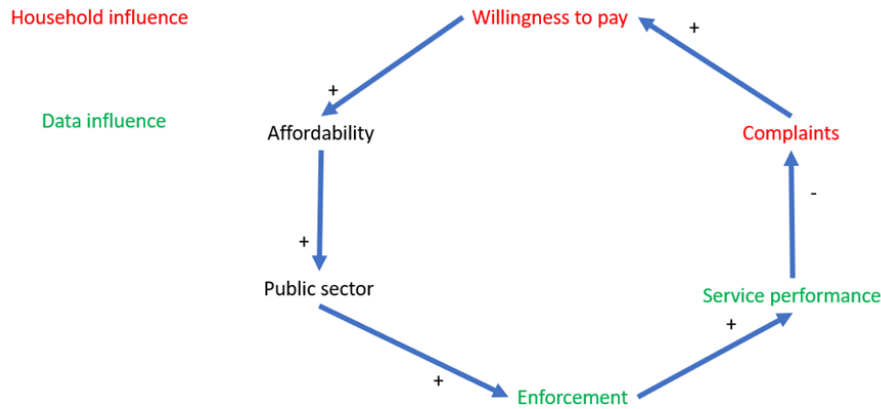


Group 3:



Annex 3: Feedback Loops

The following is an example of how a feedback loop, in this case a positive feedback loop, from Session IX can influence actions as identified by the group participants. The connections were identified by the group based on a generic situation, which is a compilation of the various perspectives of the participants. A potential feedback loop is shown in the figure below.



In the above figure, householders can influence the willingness to pay for services and complaints, while data influences enforcement and service performance. Taking complaints as the starting point, the more complaints there are, the more willingness there is to pay for a better service. The more willingness to pay, the easier it is to afford a better service. The more affordable the service, the easier it is for the public sector to invest in it. Once invested, the public service wants to ensure it is maintained, which results in increased enforcement. The greater the enforcement, the better the service performance resulting in fewer complaints.

Annex 4: Field trip photos

Participants of the Expert Group Meeting visited the Sudokwon landfill site.



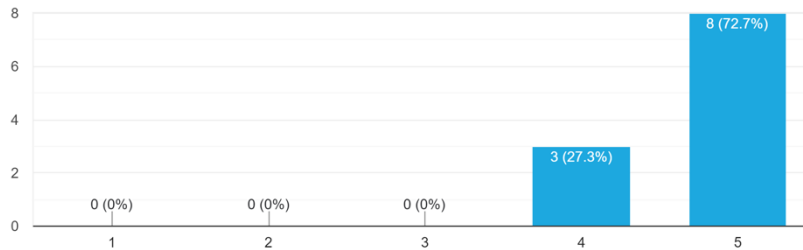
Participants also visited the National Institute of Biological Resources (NIBR).



Annex 5: Post-event survey analysis - consolidated participant comments

The post-event survey reflected generally positive feedback with 11 participants providing feedback.

6. Please assess how useful/relevant the meeting as a whole is for your work. (1= Not relevant; 5=Extremely relevant)
 응답 11개



The overall quality of presentations during substantive sessions received high marks, with 6 respondents giving a rating of 5 and the remaining 4 providing a score of 4. The session format was also well-received, with 7 participants giving a rating of 4 and the rest rating it 5. In evaluating the meeting's overall format, including the mix of expert presentations, country cases, and interactive discussions, respondents mostly rated it as excellent (5), indicating a successful format of the meeting. The facilitation and moderation of sessions garnered positive feedback, although two participants rated it as a 3. The organization of the meeting, encompassing documentation, breaks, meal services, and field trips, received high praise, with three respondents giving it a score of 4 and the rest rating it 5. The meeting's relevance to participants' work was overwhelmingly positive, with most respondents rating it as extremely relevant (5).

In terms of identifying missing topics, one respondent suggested including private sector perspectives (e.g. producers, recyclers, and consumers) and another respondent identified that the topic of criteria for evaluating circular economy practices should be added. Additionally, participants highlighted the potential benefits of annual seminars organized by UNOSD for continued learning and exchange of experiences in the field of circular economy, while also suggesting that more time be allocated for presentations in future events.