



**Capacity Building Workshop on
Extended Producer Responsibility (EPR) in West Asia**

17-18 September 2024

Manama, Bahrain

Report of the Workshop

Table of Contents

I. Executive Summary	Error! Bookmark not defined.
II. Introduction	3
III. Day 1 Session 1: Opening and Introduction	4
IV. Session 2: What is Extended Producer Responsibility	5
V. Session 3: Waste Management Panoramas in West Asia.....	10
Iraq.....	11
Jordan.....	12
Kingdom of Saudi Arabia	14
VI. Day 2 Session 4: Waste Management Panoramas in West Asia (Cont.).....	16
Kuwait	16
Bahrain.....	17
Yemen	18
Palestine.....	20
VII. Session 5: How to Develop and Implement Extended Producer Responsibility (EPR).....	22
VIII. Session 6: Concluding	28
IX. Contact.....	29
Annex 1: List of Participants.....	29
Annex 2: Agenda.....	32

I. Executive Summary

United Nations Environment Programme (UNEP) in collaboration with Supreme Council for Environment organised this capacity-building workshop on Extended Producer Responsibility (EPR) to enhance capacity and knowledge of West Asian countries in the development and implementation of EPR schemes, as one more tool for the acceleration of circular economy and improvements on waste management in the region. The event, participated by eight Member States, provided a forum for West Asian countries to engage in knowledge sharing and capacity building, with a particular focus on EPR.

West Asian countries are in varying states in the development and implementation of EPR schemes. Some countries have already begun developing EPR legislation, while others are in the preparatory phase. Additionally, several countries recognize the importance of EPR and are prepared to take concrete initial steps in the near future.

Participants gained enhanced knowledge on several key aspects of EPR, including its basics, intended consequences, and operating conditions. They explored the evolution and current status of EPR implementation, with attention to Multilateral Environmental Agreements (MEAs), and discussed the roles of key stakeholders involved in EPR. The sessions also covered financing strategies for implementing EPR. Additionally, participants benefited from shared experiences of successful EPR projects from other regions.

The workshop concluded that, given the countries' varying stages of EPR development and implementation, sharing experiences at regional and national levels—alongside targeted support—will significantly advance circular economy efforts across the region. It served as an important platform for coordination and knowledge sharing on waste management among West Asian nations. Participants emphasized the need to continue this regional forum annually and to promote targeted EPR-related actions at the national level.

II. Introduction

1. The regional capacity building workshop on Extended Producer Responsibility (EPR) in West Asia was held in Manama Bahrain on September 17-18, 2024. The workshop was organised by the United Nations Environment Programme Regional Office for West Asia (UNEP ROWA) in collaboration with the Supreme Council of Environment in Bahrain.
2. The workshop brought together representatives from West Asia countries and various experts in the field of EPR. The list of participants and workshop agenda can be found in Annex 1 and Annex 2, respectively.

III. Day 1 Session 1: Opening and Introduction

3. In the presence of H.E Dr. Mohammed bin Daina, the Minister of Oil and Environment and Special Envoy for Climate Affairs in the Kingdom of Bahrain, the workshop commenced with the official opening remarks delivered by Eng. Luma Al Mahrous, Director of the Control and Environmental Protection Department at Supreme Council for Environment (SCE). She welcomed the participants and highlighted the efforts taken in Bahrain on environmental protection including waste management. She added that the workshop presented an opportunity to exchange expertise and experience with regards to the environmentally sound management of waste management, particularly on EPR.
4. Abdul-Majeid Haddad, Deputy Regional Director for the United Nations Environment Programme (UNEP) in West Asia, during his opening remarks, extended a warm welcome to all participants, expressing his appreciation for the collaboration among various stakeholders in organizing this important workshop focused on EPR tailored for West Asia's unique context. He emphasized the importance of addressing the economic disparities, environmental challenges, and legislative frameworks within the region; particularly highlighting the challenges related to waste management, based on findings from UNEP's Global Waste Management Outlook 2024¹. He highlighted the workshop's goal to foster the exchange of regional and international expertise and to formulate methodologies suitable for implementing EPR effectively across different countries. Mr. Haddad expressed his gratitude towards H.E Dr. Mohammed bin Daina, the Minister of Oil and Environment and Special Envoy for Climate Affairs, for his continuous support to UNEP activities and for the Supreme Council for Environment in Bahrain for the significant efforts in facilitating the hosting of the workshop to ensure its success.
5. Mr. Iyngararasan Mylvakanam, Regional Coordinator for Chemicals and Pollution in West Asia, provided a general Overview of the workshop where its objectives were presented as follows:
 - Disseminate and share knowledge, experiences, and best practices in the development and operation of EPR Systems. This workshop will specifically focus on the waste management sector in West Asian countries, aiming to enhance skills through collaborative learning.
 - Exchange experiences and practices regarding the current situation and challenges related to waste management at the national level, including Extended Producer Responsibility (EPR).
 - Prepare a list of country profiles showing the development of EPR schemes in every member state (regardless of the stage they are in), to guide future UNEP support to countries in the region.
6. The general overview of the workshop was followed by the launching of the Global Waste Management Outlook 2024 by a presentation (Annex 3) from Mr. Felipe Dall, UNEP International Environment Technology Centre (IETC). The Global Waste Management

¹ <https://www.unep.org/resources/global-waste-management-outlook-2024>

Outlook 2024 expressed the persistent linkage between economic growth and waste generation, stressing that current trends may exacerbate unless proactive measures are taken. It revealed that annually, 2.1 billion tonnes of waste are produced globally, with 40% still managed through uncontrolled disposal methods such as open dumping and burning. This practice is particularly prevalent in rapidly developing economies where waste management infrastructure has not kept pace with economic growth.

7. The Outlook explored three future scenarios reflecting different waste management strategies and their potential impacts by 2050. The "Waste Management as Usual" scenario predicts nearly double the negative impacts observed today if current practices continue without significant reform. In contrast, the "Waste Under Control" scenario shows modest improvements, suggesting that implementing better waste management practices can stabilize or slightly improve the current situation. The most optimistic "Circular Economy" scenario indicates substantial improvements over the current baseline, suggesting that a shift towards circular economy principles could significantly mitigate the negative impacts of waste. Financial projections associated with these scenarios indicate that effective waste management could transition from a cost of \$640 billion to a net gain of \$108 billion, highlighting the economic as well as environmental benefits of improved waste practices.
8. The Outlook also identified several areas where current waste management strategies fail, including excessive focus on downstream solutions, neglect of health and climate impacts, insufficient inclusion of women and informal workers, weak enforcement of regulations, and the failure to hold polluters accountable. To address these shortcomings, it recommended prioritizing upstream waste reduction strategies, harnessing data and digitalization for better waste tracking and management, implementing effective schemes to ensure polluters pay, promoting inclusive approaches that engage all citizens, integrating just transition principles into decision-making, and building national expertise in waste management.

IV. Session 2: What is Extended Producer Responsibility

9. This session aimed to explain the foundational concepts of EPR, including its framework, implementation strategies and the roles of stakeholders. The session comprises four presentations:
 - **Mr. Mihail Asenov** - EPR Basics (Annex 4): introduction of the basic concept, focusing on the responsibility producers bear for their products' environmental impacts throughout their lifecycle.
 - **Assistant Professor Dr. Panate Manomaivibool**, International College, Burapha University - Extended Producer Responsibility (EPR) Its intended consequences and operating conditions (Annex 5): EPRs theoretical underpinnings and its practical challenges, especially in developing countries.
 - **Mr. Felipe Dall** - Programme Management Officer - UNEP IETC (International Environmental Technology Centre) - Evolution and Current Status EPR Implementation Including MEAs (Annex 6): evolution and current implementation

of EPR in Multilateral Environmental Agreements (MEAs) and other global governance mechanisms.

- **Mr. Alexander Batteiger** - Global Action Partnership for EPR – PREVENT Working Group (Annex 7): presentation of the Global Action Partnership for EPR, which seeks to enhance global EPR systems through international collaboration and knowledge exchange.

EPR Basics

10. Mihail Asenov offered an insight on the basics of the EPR concept defined by “producers assume the responsibility for the environmental impact of their products and cover the costs for collection, sorting and treatment of post-consumer waste”. EPR policies shift the responsibility and costs of waste management from local governments to producers, emphasizing the need for producers to manage the lifecycle of their products including collection, sorting, and recycling. The main objectives Identified for EPR are:

- To provide incentives for eco-design (products that are easier to dismantle, reuse and recycle)
- To encourage separate waste collection and recycling by helping countries to reach their recycling targets and ensuring citizens’ cooperation through awareness raising campaigns
- To reduce landfilling, by providing waste management options that are higher up in the waste hierarchy (reduce-reuse-recycle)

11. He introduced the roles of Producer Responsibility Organizations (PROs) which are generally non-profit and producer-owned, tasked with meeting recycling targets efficiently. He highlighted the evolution of EPR, from its inception in the 1990s to its projected state in 2025, showcasing growth in the number of EPR organizations worldwide to 400 organizations in 150 countries. Furthermore, the financial, informational, and contractual dynamics essential to effective waste management were outlined. He explained that producers are obligated to pay fees to Producer Responsibility Organizations (PROs), which are incorporated into the consumer prices of products. These funds are then allocated to municipalities or private operators to cover the costs of collecting, sorting, and treating waste. The income generated from the sale of recycled materials either goes to the PROs or the municipalities, ensuring the financial sustainability of the recycling infrastructure. Additionally, he detailed the informational flow within the system, where producers must annually report the quantities of materials they have marketed. This data allows PROs to track and report on their achievements in material recovery and recycling targets. He also discussed the contractual relationships that PROs establish with producers, waste collectors, and recycling companies to formalize these processes and ensure compliance with EPR obligations.

12. Financial structures within Extended Producer Responsibility (EPR) systems were thoroughly analyzed, highlighting distinctions between competitive, monopolistic, collective, and individual schemes. Competitive EPR schemes, which involve multiple Producer Responsibility Organizations (PROs) operating within the same market, promote

cost optimization through market-driven efficiencies and innovations. However, they require strong state intervention to regulate and coordinate the diverse activities of multiple PROs, ensuring that environmental standards are consistently met across the board. Conversely, monopolistic EPR schemes, where a single PRO dominates the market, can potentially streamline operations and standardize waste management practices, although they risk inefficiency due to the lack of competitive pressure.

13. On the other hand, collective EPR schemes, where producers share responsibility and costs, facilitate economies of scale, thereby reducing the individual financial burden. Such schemes are typically easier to manage and regulate but may dampen individual producers' incentives for innovation in product design and waste reduction. Individual EPR schemes allow producers to directly manage their products' end-of-life responsibilities, aligning financial and organizational responsibilities with the actual environmental impacts of their products. This direct linkage encourages innovation but lacks the economies of scale that collective schemes benefit from, potentially increasing the overall cost of waste management. Each of these schemes presents unique benefits and challenges, and the choice among them should consider the industry's specific characteristics, the environmental goals intended by the EPR legislation, and the regulatory capacity to oversee these systems effectively.
14. To conclude, several benefits of EPR for society were identified such as infrastructure investment, job creation, and reduced public health and environmental impacts like encouraging separate waste collection and recycling and reducing land filling.

Extended Producer Responsibility (EPR) Its intended consequences and operating conditions

15. Dr. Panate provided a comprehensive analysis of Extended Producer Responsibility (EPR), examining its theoretical underpinnings, practical applications, and challenges, particularly in developing countries. Dr. Manomaivibool, who has an extensive background in environmental and public policy, started the presentation with an introduction to EPR's classical model, which integrates financial and physical responsibilities through mechanisms such as EPR fees and take-back laws.
16. He used examples like the traditional milkman and refillable beer bottles to highlight conflicts between standardization and proprietary diversification. Dr. Manomaivibool then provided a formal definition of EPR, describing it as a policy designed to extend a manufacturer's responsibility across the product's lifecycle, particularly focusing on post-consumer stages like take-back, recycling, and final disposal. This setup is intended to address the societal issue of a throwaway culture characterized by the high-speed, large-scale consumption of nonrenewable resources. He outlined the operational conditions and typical interventions within EPR frameworks, showcasing diagrams that map out the relationships and flows between producers, consumers, municipalities, and recycling facilities, emphasizing the roles of various stakeholders in ensuring effective EPR implementation.

17. Furthermore, the two main objectives of EPR are classified into upstream and downstream processes, each with specific sub-goals. The upstream objective focuses on the initial phases of the product lifecycle, especially on improving product design to reduce environmental impacts at the end of its life. This includes fostering individual responsibility among producers to consider the environmental impacts of their products and promoting a collective system where multiple stakeholders collaborate to manage these impacts. On the other hand, the downstream objective concentrates on the end-of-life stage of products, aiming to enhance the efficiency of waste collection, ensure environmentally sound waste treatment, and maximize material and energy recovery from waste. This approach ensures that both the creation and disposal of products integrate sustainable practices, aligning with EPR's goal to extend producer responsibility throughout the product lifecycle and drive comprehensive environmental improvements.
18. The presentation further delved into EPR as a policy paradigm, discussing its theoretical framework which includes problem theory, intervention theory, and implementation theory. The primary objectives of EPR—improvement in product design and efficiency in waste management—are highlighted alongside various policy instruments ranging from administrative and economic tools to informative measures used to enforce EPR. Advanced Recycling Fees (ARFs) are discussed as a method to cover costs related to historical waste, incorporating eco-modulated fees to reflect design implications.
19. Significant challenges EPR faces in developing countries, such as market control to prevent free riders and the integration of informal sectors into the EPR system, are addressed. Dr. Manomaivibool concluded with a case study on Thailand, where only a small fraction of waste electrical and electronic equipment (WEEE) is safely disposed of, highlighting the gap between EPR's theoretical effectiveness and its practical implementation challenges. The presentation emphasized the necessity of reallocating responsibility to producers to stimulate lifecycle improvements of products and points out the critical role of effective EPR program design and implementation in achieving environmental sustainability goals.

Evolution and Current Status EPR Implementation Including MEAs

20. Felipe Dall explored the development and application of EPR from its inception to its current role within the framework of environmental governance and Multilateral Environmental Agreements (MEAs). The presentation kicked off with a historical perspective, tracking the origin of EPR concepts in the 1970s, formalization in the 1990s, and widespread adoption in the 2000s, citing key publications and studies that shaped its evolution.
21. Dall provided an in-depth analysis of EPR's effectiveness by showcasing its implementation in different sectors and regions. He particularly emphasized its impact on recycling rates for materials like plastics and textiles, citing data to demonstrate significant improvements in countries with robust EPR frameworks.

22. The evolution of EPR is further explored through the introduction of EPR 2.0, which expands the scope of EPR to include additional product groups and incorporates a sophisticated fee modulation system to reflect the environmental impacts of products more accurately.
23. The presentation delved into the specifics of EPR implementation across various regions, with a particular focus on Latin America and the Caribbean. He describes the heterogeneous approaches within these regions, highlighting the diverse legal frameworks that govern EPR and the sector-specific variations. This underscores the challenges and complexities of implementing EPR in diverse legal and economic contexts.
24. Dall's analysis extended to the integration of EPR within international environmental frameworks, specifically MEAs. He outlined how EPR underpins the financial and administrative strategies of MEAs, facilitating better waste management and recycling standards globally. Detailed examples include the role of EPR in the Basel Convention's efforts to manage plastic waste and the Stockholm Convention's actions on persistent organic pollutants.
25. Additionally, the presentation engaged with the role of EPR in the context of the World Trade Organization (WTO), examining how EPR-related measures are reflected in international trade policies and notifications. Dall pointed out the increasing recognition of EPR in global trade discussions, indicating a shift towards more sustainable trade practices that consider environmental responsibilities.
26. Finally, Dall summarized the key takeaways from the workshop, emphasizing the growing normalcy of EPR in global environmental policy. He stressed EPR's potential to fund and facilitate international agreements, address cross-border environmental challenges, and reduce the fiscal pressure on public budgets through innovative financing mechanisms. The presentation not only highlighted the successes of EPR but also candidly addressed the challenges in its implementation, advocating for adaptive and collaborative approaches to enhance its effectiveness in promoting environmental sustainability.

Global Action Partnership for EPR

27. Alexander Batteiger provided a detailed overview of the organization's mission (Thinking ahead jointly) , and the support structure which consists of, governments of partner countries that want to introduce EPR systems, organizations and institutions that have been mentored by their governments to set up EPR systems, especially PROs, other stakeholders, for instance informal sector representatives, and practitioners and experts who seek to exchange with peers, and ongoing projects aimed at advancing EPR systems globally. The partnership's main goal is to foster international collaboration among EPR practitioners and experts, innovating the global conversation on EPR by connecting stakeholders through a platform that facilitates the exchange of best practices and lessons learned. He emphasized the partnership's role in providing extensive resources, such as a library of EPR-related documents, hosting public events, and offering

coordinated technical support to policymakers and stakeholders to help operationalize EPR.

28. A significant focus of the presentation is the description of the EPR Helpdesk which offers tailored support through peer-learning sessions and an expert pool. The expert pool is designed to provide three levels of support: short-term expert engagements on specific topics, medium-term consultancy on concrete cases or questions, and long-term holistic engagement through a separate expert tender. This structured support aimed to address the specific needs of different stakeholders at various phases of EPR implementation.
29. He highlighted specific projects where the partnership has provided targeted country support, such as in Argentina and Malaysia, with the support of the Norwegian Retailers' Environment Fund and the German Federal Ministry for Economic Cooperation and Development (BMZ). These projects focus on developing and enhancing national EPR systems, with activities ranging from baseline and gap analyses to the development of recommendations for improving waste collection, segregation, and recycling processes.
30. Looking ahead to 2024, the partnership plans to extend its activities to include more material streams, enhance its library, and contribute to international processes through webinars and sessions at major events like the World Circular Economy Forum and the IFAT Trade Fair. He also touched on community engagement through the EPR working group of the PREVENT Waste Alliance, highlighting the formats for public and alliance-member events that encourage ongoing discussion and peer learning.
31. In conclusion, Alexander Batteiger reaffirmed the Global Action Partnership for EPR's commitment to advancing global EPR implementation through a collaborative and supportive framework that encourages innovation and practical solutions to the challenges of waste management and recycling. The partnership positions itself as a pivotal player in the global effort to enhance environmental sustainability through the effective implementation of EPR systems.

V. Session 3: Waste Management Panoramas in West Asia

32. The purpose of this session was to showcase how various countries from West Asia and the region are incorporating Extended Producer Responsibility (EPR) into their national waste management strategies. By focusing on EPR as the main objective of the workshop, the session highlighted each country's legislative frameworks, strategic initiatives, practical actions and challenges when it comes to promoting sustainable waste management.
33. Sessions 3 and 4 brought together participants from the following countries:
 - **Iraq** – Mr. Maki Hadi Imran - Director of the Babylon Environment Directorate - Iraqi Ministry of Environment. (Annex 8)
 - **Jordan** – Engineer Heba Zaablawi - Head of the Solid Waste Management Department at the Jordanian Ministry of Environment. (Annex 9)

- **Kingdom of Saudi Arabia (KSA)** – Mr. Mohammed F. Osailan – Project Manager of EPR project, National Centre for Waste Management, on "Extended Producer Responsibility in KSA" (Annex 10)
- **Kuwait** – Mr. Bader Almasoud, Environment Public Authority – National Waste Management Strategy in Kuwait 2040 (Annex 11)
- **Bahrain** - Engineer Sadeq Salah Rahma, Senior Environmental Specialist – Extended Producer Responsibility in Bahrain (Annex 12)
- **Yemen** - Engineer Yasser Al-Ghubair, Yemen's Ministry of Water and Environment, Director General of Environmental Policies and Programs - The National Landscape for Waste Management Related to Extended Producer Responsibility (Annex 13)
- **Palestine** – Mr. Yaser Abushanab, Environment Quality Authority, - Extended Producer Responsibility in Palestine (Annex 14)
- **Lebanon** – Mr. Bassam Sabbagh, Ministry of Environment - EPR Basics, Case of Lebanon (Annex 15)

Iraq

34. The presentation by Mr. Maki Hadi Imran from the Iraqi Ministry of Environment focused on Iraq's waste management framework and strategies. He outlined legislative measures adopted to enhance environmental management and waste handling for sustainability and international compliance.
35. He referenced the Iraqi Law for the Protection and Improvement of the Environment Number 27 of 2009, which establishes policies to safeguard the environment against pollution. This law forms the basis of Iraq's efforts to manage waste effectively and mitigate environmental degradation.
36. Mr. Imran highlighted the National Environmental Strategy and Action Plan for Iraq 2013, which aims to develop waste management systems. The strategy encourages producers and importers to reduce waste generation, create recyclable products, and use environmentally friendly materials, aligning with global Extended Producer Responsibility (EPR) trends.
37. He discussed Iraq's Nationally Determined Contributions (NDC) 2021, setting targets to reduce greenhouse gas emissions across sectors like agriculture, waste, transportation, and oil and gas. This integrates waste management strategies with broader environmental goals to combat climate change.
38. Key strategies include selecting sanitary landfill sites based on criteria such as distance from residential areas and water sources, geological suitability, and environmental sustainability. Efforts are underway to phase out unsanitary landfill sites and waste quarries, promoting waste utilization for energy generation and organic fertilizer

production—reflecting a shift toward resource recovery and circular economy principles. The Ministry is working to regularize landfill sites in Baghdad and other governorates to meet environmental standards.

39. Mr. Imran also mentioned the use of modern technologies, legislation, community awareness, and Iraq's participation in international agreements like the Basel Convention. These measures form a comprehensive approach to enhance waste management and recycling processes, aiming to reduce environmental impact while fostering economic and social benefits.
40. Concluding, he envisioned a sustainable and green future for Iraq, emphasizing the government's commitment to implementing effective waste management strategies that contribute to environmental protection and sustainable development. This vision involves aligning national actions with global environmental goals through strategic planning, legislative efforts, and community engagement.

41. **Q&A Discussion after this Presentation:**

1. **In the plan put in place for waste management did the government use waste incineration as a way to reduce waste quantities?**

Answer: The government of Iraq has delved into an investment opportunity with an Emirati company on this topic and it deduced that waste incineration can be used for energy production in addition to several other waste recycling plants for several materials like plastics, carton, and steel all over the country.

2. **What are the conditions of garbage landfills in terms of distance from certain locations?**

Answer: The minimum distance from populations for Landfills is more than 1 km and 500 meters from water sources and public roads.

3. **Are there plans for the Iraqi government to transform all landfills within its borders into sanitary landfills?**

Answer: Yes, a plan is in place that every 3 districts must have a common sanitary landfill.

Jordan

42. The presentation delivered by Eng. Heba Zaablawi provided an extensive overview of Jordan's strategies and legislation related to waste management with a focus on Extended Producer Responsibility (EPR). Eng. Zaablawi outlines the organizational structure of the Jordanian Ministry of Environment, which is divided into various departments dedicated to managing different aspects of environmental protection, including solid and hazardous waste management, and the specific department for

Extended Producer Responsibility (EPR). This structure ensures a focused approach to managing environmental challenges across multiple fronts.

43. She delved deeply into the legislative framework governing waste management in Jordan. Key laws and regulations include Environmental Protection Law No. 6 of 2017, regulations on degradable plastic shopping bags, and systems for environmental monitoring and solid waste management established in 2020. Additionally, in 2022, Jordan implemented instructions for applying the national mechanism of EPR to address the environmental impacts from packaging waste materials.
44. Eng. Zaablawi's presentation highlighted the collaborative efforts among Jordan's Ministry of Environment, Ministry of Local Administration, and the Greater Amman Municipality to improve waste management. This collaboration focuses on joint planning, information exchange, shared expertise, and collective monitoring to ensure adherence to environmental standards. She emphasized the challenges of widespread random waste disposal in urban and rural areas. To address this, the Ministry has initiated strategies such as public awareness campaigns, infrastructure development, and stricter waste management regulations to foster sustainable practices and enhance environmental governance in the country.
45. She also covered Jordan's efforts in recycling and managing various types of waste. It mentioned the treatment and recycling of organic waste into compost or energy, the production of RDF from textile waste, the export of paper and cardboard for recycling, and the management of hazardous wastes, including used mineral oils and electronic waste. Eng. Zaablawi emphasized the establishment of 43 sites for collecting electronic waste across the country in collaboration with the UNDP and the local municipalities, showcasing Jordan's proactive approach to addressing the environmental challenges posed by e-waste.
46. Towards the end, the presentation noted Jordan's alignment with global environmental initiatives, particularly in tackling plastic pollution. It mentioned Jordan's legislative and strategic efforts to reduce plastic waste and its participation in international agreements to curb environmental pollution.
47. In conclusion, Eng. Zaablawi provided a comprehensive view of Jordan's solid waste management strategies, highlighting the legislative measures, inter-departmental collaboration, challenges, and proactive steps towards sustainable waste management and environmental protection. This approach not only addressed local environmental issues but also contributed to global environmental goals, emphasizing Jordan's commitment to environmental sustainability.

48. **Q&A Discussion after this Presentation:**

1. **What were the challenges faced when implementing the EPR System in Jordan?**

Answer: EPR is still a new concept and a new system being implemented, the Jordanian government still does not have the required capabilities and capacity building is very essential for the success of any new initiative being implemented.

Another challenge was supervising the data entered into the EPR monitoring system, especially concerning waste quantities. Ensuring accurate and reliable data was crucial for the system's effectiveness, requiring robust supervision and monitoring mechanisms. Acceptance by organizations and producers was also a significant hurdle. To overcome their hesitation, efforts were made to emphasize that the EPR system is designed for the greater good of the environment and society as a whole. This focus helped in gaining support and participation in the initiative.

2. What materials does the EPR system cover?

Answer: The Extended Producer Responsibility (EPR) system in Jordan covers all packaging materials used in the country. However, due to the impracticality of implementing the system for all producers simultaneously, the rollout is being conducted in phases. In the first year, the EPR system targets the largest contributors to packaging waste. Specifically, companies with a total revenue exceeding 50 million Jordanian Dinars or those importing more than 1,000 tons of packaging materials will be the initial subjects of the EPR system. This phased approach allows for manageable implementation while focusing on organizations that have the most significant impact on waste packaging.

Kingdom of Saudi Arabia

49. The presentation outlined the Kingdom of Saudi Arabia's approach to Extended Producer Responsibility (EPR) within the broader context of Vision 2030, which aims to foster a vibrant society, a thriving economy, and an ambitious nation. The presentation highlighted the significant roles of the Ministry of Environment, Water and Agriculture (MEWA) and the National Center for Waste Management (MWAN) in addressing the challenges posed by escalating waste management issues in the Kingdom. Saudi Arabia faces substantial environmental and economic costs due to unsustainable waste management practices, with 95% of waste being landfilled as of 2020 and only 5% recycled. The rapid economic growth, fueled by mega projects and tourism development, has led to high expectations of waste generation, projected to rise from 8.22 rkg per capita per day in 2023 to 11.57 kg by 2030.
50. To combat these issues, MEWA, which is considered the policy maker, and the National Center for Waste Management (MWAN) considered the sector regulator, have set several strategic objectives. The MEWA is focused on preserving the environment, achieving water and food security, and promoting sustainable development across various sectors. The MWAN's aim is to regulate the waste management sector, enhance its economic performance, raise compliance levels, promote sustainable waste management practices, and achieve digital transformation in the sector.
51. The MWAN has drafted the Master plans and the National Waste Management Strategy, which includes targets for reducing waste generation and increasing landfill diversion rates through recycling and other sustainable practices. The master plan was presented

with a set of objectives accompanied by some examples of Key Performance Indicators (KPIs), most importantly, reduce the amount of waste generated across all waste streams, adopt correct management of different waste streams to maximize value recovery through fit for purpose facilities, and implement correct management of different waste streams to maximize value recovery through appropriate and fit for purpose facilities. As for the KPIs, by 2040, 3% reduction of waste generated per capita across all waste streams, overall landfill diversion rate of 90% and 79% of waste prepared for recycling. The strategy is one of the kingdom's most ambitious environmental efforts, aiming to integrate sustainable waste management solutions across all regions of Saudi Arabia.

52. In the economic sphere, MWAN detailed various tools and mechanisms required to achieve circularity in waste management, highlighting the importance of EPR schemes among other strategies. Saudi Arabia has already established a comprehensive legal and regulatory framework for EPR, which mandates the development and implementation of EPR under the National Waste Management Law. This framework included specific targets for waste reduction and recycling, set by MWAN, to ensure financial sustainability of the waste management sector based on principles of the circular economy.
53. The EPR scheme in Saudi Arabia covers a broad range of products including plastic bags, batteries, packaging, and electronics among others. The ongoing project aims to design a tailored EPR model to effectively manage waste related to these products. This involves assessing the current state of waste management for each EPR product, benchmarking international practices, and developing detailed business models and governance structures for EPR implementation.
54. The recommendations for Extended Producer Responsibility (EPR) in Saudi Arabia are strategically developed using a five-dimensional framework designed to ensure the effectiveness and adaptability of the EPR system within the unique environmental and regulatory context of the Kingdom. This framework comprehensively addresses the various facets of waste management and regulatory compliance required for successful EPR implementation. The first dimension, EPR Scope & Targets, involves setting specific, measurable goals for waste reduction and landfill diversion that align with Saudi Arabia's Vision 2030 sustainability objectives. These targets are benchmarked against international standards but are customized to meet local needs, focusing on reducing waste per capita and improving recycling rates. The second dimension examines the existing Waste Management Infrastructure, Practices, and Schemes. It identifies the current capabilities and gaps in waste management infrastructure to ensure that the facilities are adequately prepared to handle the anticipated increase in recycling and recovery activities driven by EPR regulations.
55. Enforcement and Financial Mechanisms and Regulation, the third dimension, is crucial for the framework. It involves developing robust regulatory measures and financial incentives or penalties to ensure compliance from all stakeholders involved in the product lifecycle, from producers to consumers. This includes implementing stringent enforcement mechanisms that support the polluter pays principle. The fourth dimension, Education, Awareness, and Culture, focuses on changing consumer behaviors and building

widespread support for EPR through targeted educational programs and awareness campaigns. This effort is crucial for cultivating a culture that supports recycling and proper waste disposal across different segments of society. Finally, the Roles & Responsibilities and Governance dimension outlines the specific duties and governance structures required to manage the EPR scheme effectively. It ensures clear communication and operational clarity among government bodies, private sector entities, and NGOs, fostering a collaborative environment necessary for the successful implementation of EPR. Together, these dimensions form a robust and comprehensive framework that guides the development of EPR in Saudi Arabia, ensuring that it not only reduces the environmental impact of waste but also supports sustainable economic development in alignment with the Kingdom's ambitious Vision 2030 goals.

56. The presentation also underscored the importance of engaging with stakeholders across the public and private sectors to gather data and facilitate the development of a well-suited EPR scheme. This collaborative approach is crucial for the successful implementation of EPR in Saudi Arabia, which is envisioned to significantly contribute to the country's sustainability goals under Vision 2030.
57. In conclusion, the presentation emphasized the commitment of Saudi Arabia to tackle the challenges of waste management through robust regulatory frameworks, strategic planning, and stakeholder engagement, highlighting the pivotal role of EPR in transforming waste management practices in line with global sustainability standards.

VI. Day 2 Session 4: Waste Management Panoramas in West Asia (Cont.)

Kuwait

58. The presentation from Kuwait focused on the country's strategic approach to Integrated Waste Management, particularly focusing on the principles of a circular economy and considering the implementation of Extended Producer Responsibility (EPR), though it is currently at a preparatory stage. It outlined the efforts by the Kuwaiti Public Authority for the Environment to develop a comprehensive waste management strategy.
59. The presentation began by defining the vision which stated, "The sustainable integrated management of the waste sector in the State of Kuwait through the optimal application of the hierarchy principle of waste management to ensure the quality and well-being of life and to promote investment and innovation." and a mission that underscored the commitment to implement sustainable production and consumption patterns that align with global environmental standards.
60. Central to the development of the strategy are the principles of a circular economy, which aim to minimize waste and make the most of resources. This concept is illustrated

through the five-tier waste management hierarchy, which prioritizes waste prevention, followed by minimization, recycling, energy recovery, and as a last option, disposal. This hierarchy is a fundamental element in shaping Kuwait's legislative and operational frameworks to manage waste more effectively.

61. The presentation provided a detailed analysis of the current waste situation in Kuwait, using data from 2018 to highlight the composition and recycling potential of household waste. It emphasizes the high percentage of recyclable materials in the waste stream, underscoring the significant opportunities for improving recycling practices. EPR shifted the responsibility of end-of-life product disposal to producers and importers, incentivizing them to design products that are easier to recycle and less harmful to the environment. The presentation discussed the financial tools and investment opportunities related to EPR, highlighting how EPR can drive economic benefits alongside environmental improvements.
62. The presentation also covered general recommendations and practical steps Kuwait might take to operationalize EPR. This included setting up appropriate financial mechanisms to support EPR initiatives, creating favorable conditions for investment in waste management technologies, and fostering a legislative environment that encourages waste reduction and recycling.
63. In conclusion, Kuwait's presentation showcased a proactive and structured approach to waste management, centered around the principle of Integrated Waste Management. By integrating these principles into national policies and practices, Kuwait aims to enhance its waste management infrastructure, reduce environmental impact, and promote sustainable development in alignment with global environmental goals and most importantly, introduce the concept of EPR into its Integrated Waste Management Strategy.

Bahrain

64. The presentation from Bahrain, delivered by Engineer Sadeq Salah Rahma, focused on proper waste management within the Kingdom. The presentation outlined Bahrain's strategic environmental framework as overseen by the Supreme Council for the Environment, the key governmental entity tasked with developing and monitoring environmental strategies and policies alongside various ministries and institutions. The council, chaired by His Highness Sheikh Abdullah bin Hamad Al Khalifa, the personal representative of His Majesty the King, and led by His Excellency Dr. Mohammed bin Mubarak bin Daina, the Minister of Oil and Environment and the Special Envoy for Climate Affairs, has a mandate that includes protecting the environment and its resources from all activities and practices that may lead to pollution or environmental degradation. Additionally, the council works to promote environmental awareness, support the adoption of green technologies, and enhance community participation in environmental conservation.

65. Eng. Rahma also detailed Bahrain's national laws and regulations relevant to waste management, established through several decrees and decisions. Notably, Decree-Law No. 7 of 2022 on the environment and Law No. 10 of 2019 concerning public cleanliness set the foundational legal framework. Specific decisions, such as Decision No. 4 of 2005 on the management of used oils, Decision No. 3 of 2006 on the management of hazardous waste, and other regulations aimed at managing healthcare hazardous waste and banning the import of plastic waste, showcase Bahrain's commitment to meticulous waste management and pollution reduction.
66. Bahrain has implemented various mechanisms that pave the way for the future implementation of an EPR scheme within the country, such as municipal fees that partially cover the costs of collecting household waste from all governorates and operational costs for specific waste management facilities. These funds are also directed into the National Fund for Environmental Protection and Development, established by the new Environmental Law No. 7 of 2022, which finances environmental protection initiatives, supports community and non-formal sector involvement, and funds research and studies in environmental protection.
67. In conclusion, Bahrain's presentation illustrated the country's aspirations to implement Extended Producer Responsibility (EPR) in the future as part of its environmental management strategies. While Bahrain has established legal and regulatory frameworks and has active oversight from the Supreme Council for the Environment, the country is currently taking preparatory steps towards integrating EPR into its broader strategy for achieving sustainable development. The implementation of mechanisms like municipal fees and the establishment of the National Fund for Environmental Protection and Development are initial efforts that form a foundation for enhancing environmental practices and promoting sustainable waste management across the Kingdom.

Yemen

68. The presentation delivered by Engineer Yasser Al-Ghubair from Yemen's Ministry of Water and Environment provided a comprehensive overview of Yemen's waste management policies and discussed the potential role of Extended Producer Responsibility (EPR) within this framework. While Yemen has not yet implemented an EPR system, the presentation emphasized the need for sustainable practices and considered how EPR principles could be integrated into future strategies, given the environmental and regulatory challenges the country faces.
69. The presentation began by defining EPR as a policy approach where the responsibility of a product is extended to the post-consumer stage of its lifecycle. It aims to shift the burden of waste management from municipalities and taxpayers to the producers, aligning with the polluter pays principle. This conceptual exploration of EPR is part of a broader strategy to enhance environmental governance and promote a circular economy in Yemen. Eng. Al-Ghubair outlined the general guidelines for potential EPR

implementation, including important terms, goals, potential product standards, and essential elements to consider in policymaking.

70. Eng. Al-Ghubair mentioned that one of the most important steps in designing effective systems like EPR schemes is establishing clear goals and objectives, which may include:

- Increasing waste prevention, product reuse and waste recycling.
- Reducing pressure on resources to promote sustainable development.
- Ensuring the removal of hazardous substances prior to recovery and final disposal.
- Minimize final disposal.
- Incorporate waste management costs into the price of the product, thereby reducing waste management costs borne by municipalities and/or governments.
- Developing the production of cleaner products, acting as an incentive for more environmentally compatible products; developing and introducing new technologies and capabilities.
- Formalization of the informal sector, to ensure environmentally sound management.

These objectives reflect Yemen's commitment to enhancing environmental governance and promoting sustainable waste management practices, aligning with the principles of EPR despite not having a formal system in place yet.

71. Key tools for potentially managing EPR are discussed, which include:

1. **Product Return Requirements:** These are various forms of obligations placed on producers to take back products after they become waste. Specific targets for collection and recycling are part of this tool.
2. **Economic and Market Instruments:** Financial incentives such as deposit refunds and advanced disposal fees encourage producers to adopt EPR policies.
3. **Regulations and Performance Standards:** These include minimum content requirements for recycled materials, which can be enforced through taxes to promote product redesign and sustain a market for recycled materials.
4. **Knowledge-Based Tools:** These tools aim to support EPR programs indirectly by raising public awareness about responsible waste management.

72. He also covered the legislative framework, noting that most EPR systems are mandatory rather than voluntary. It stresses that there is no universal solution for EPR; tools must be tailored to specific regional or national contexts, considering market conditions. The importance of monitoring and control is highlighted, in addition to the need for strengthening enforcement by these following actions:

- Provide a public registry of producers to identify all producers, including online sellers and those who receive services free of charge.
- Compliance with the objectives and other requirements of the EPR system.
- Transparency in terms of contributions paid by producers, including the impact on selling prices.
- Sound financial management of the EPR system, including calculating the full costs of each type of product.

73. Challenges in potentially implementing EPR in Yemen are acknowledged, including the need for producers and other stakeholders to adapt to new roles within an EPR system, the importance of informing and educating consumers about EPR schemes, ensuring transparency and monitoring of EPR systems, addressing concerns from waste management operators about reduced access to waste, the constantly growing population with the absence of proper infrastructure management, war and conflict, insufficient government funding and the lack of technological advancements in the waste management sector.
74. Recommendations provided:
- Promote international cooperation.
 - Strengthening infrastructures to improve integrated waste management.
 - Raise awareness about Extended Producer Responsibility (EPR).
 - Modernize and enforce legislation.
 - Encourage the private sector.
75. In conclusion, while Yemen has not yet implemented an EPR system, the presentation by Eng. Al-Ghubair highlighted the country's interest in exploring EPR principles as part of its future waste management strategies. By discussing potential goals, tools, challenges, and recommendations, the presentation underscored the importance of considering EPR within Yemen's specific environmental and regulatory context to enhance sustainable waste management practices.

Palestine

76. The presentation provided an overview of the current state and efforts of waste management in Palestine, particularly focusing on plastic waste. The presentation outlined the legislative, institutional, and operational frameworks developed to potentially facilitate EPR in the region. The presentation started by defining Extended Producer Responsibility (EPR) as an environmental policy designed to reduce the environmental impact associated with consumer products such as plastics, electronics, and electrical devices. EPR shifts responsibility to producers for the lifecycle of their products, including post-consumption stages like product retrieval and safe disposal or recycling.
77. The Palestinian Authority's Quality of Environment, supported by the "Water and Environment Support" program funded by the European Union, conducted a study to assess the feasibility of applying EPR principles to manage plastic waste. This initiative is part of a regional project also involving Lebanon and Jordan. The study aligns with ongoing laws and national strategies for solid waste management, taking practical steps toward improving waste management infrastructure and regulatory frameworks.
78. Legally, Palestine has established a robust framework to support EPR implementation. This includes the Palestinian Environmental Law No. 7 of 2019 and the Solid Waste

Management Regulation No. 3 of 2019. The National Strategy for Solid Waste Management, originally spanning 2017-2022, has been extended to 2024 and is currently under revision to incorporate EPR more effectively. This legal framework is supported by the development of a recycling system for plastic waste. Currently, work is underway to establish a recycling system specifically for plastic waste, which is being linked to the principle of EPR concerning single-use plastics. This initiative demonstrates proactive steps toward integrating EPR into waste management practices, particularly targeting the challenges posed by single-use plastics. Furthermore, the preparation of a national plan and a national strategy for the sound management of plastic waste is in progress. This includes applying EPR principles to single-use plastics within the current project framework. Such strategic planning at the national level indicates a commitment to embedding EPR into waste management policies and practices comprehensively. Palestine has actively participated in international agreements it has joined, such as the Basel, Rotterdam, and Stockholm Conventions, through these conventions, Palestine is involved in implementing national and international legislation related to reducing pollutants, including plastic waste. This alignment with international environmental standards reinforces the incorporation of EPR principles into national legislation. These points collectively reinforce our conclusion by illustrating not only the existence of relevant legislation and strategic plans but also active efforts and international collaborations to implement EPR in Palestine. They demonstrate a comprehensive approach that includes legal frameworks, strategic initiatives, and international cooperation, all of which are essential components of a robust EPR implementation framework.

79. Internationally, Palestine participates in global conventions such as the Basel, Rotterdam, and Stockholm Conventions, in addition to the negotiations for a legally binding instrument to address plastic pollution, ensuring compliance with international legislation on reducing pollutants, including plastic waste.
80. Key institutional stakeholders include national authorities responsible for legislation and enforcement, waste sector workers who handle waste collection and processing, producers and retailers of plastic products, and recycling operators who manage plastic recycling processes. The Palestinian Plastic Industries Union represents the professional interests of the plastic industry.
81. The presentation also detailed a project enhancing EPR related to plastic waste, funded by the SwitchMed program, a regional initiative by the European Union aimed at transitioning to sustainable production and consumption patterns in the Mediterranean region. This project aims to build capacities related to EPR, particularly focusing on electronic and electrical waste management. Activities and outputs of the project include conducting a national assessment of plastic packaging, evaluating the current legal and technical framework, identifying roles and responsibilities of key stakeholders, and assessing the environmental, technical, economic, and social aspects of implementing EPR. The project also aims to develop national plans and strategies for the proper management of plastic waste, incorporating EPR principles to enhance recycling and reduce waste generation.

VII. Session 5: How to Develop and Implement Extended Producer Responsibility (EPR)

82. This session aimed to deepen the understanding of EPR by exploring its key components, including the roles of stakeholders, financial mechanisms for implementation, international experiences, stakeholder engagement strategies and the challenges and opportunities for the West Asia region.
83. Presentations were delivered by the following:
- **Mr. Mihail Asenov** - Key Stakeholders in EPR (Annex 16A) - Financing EPR implementation (Annex 16B)
 - **Mr. Yaser Sulaiman** - Stakeholder Engagement for a Successful EPR Implementation, Example from Jordan (Annex 17)
 - **Mr. Pascal Leroy** - EPR Experiences on E-Waste (Annex 18)
 - **Dr. Sumaya Yusuf Hasan** - Challenges and Opportunities for EPR Implementation in West Asia (Annex 19).

Key stakeholders in EPR

84. The presentation provided an in-depth analysis of the key stakeholders involved in EPR, their roles, and the overarching framework of EPR. The presentation is structured to give a clear understanding of how EPR functions across different actors in the system and outlines specific responsibilities and financial obligations for each stakeholder.
85. Mihail outlined the primary stakeholders in EPR, including producers, Producer Responsibility Organizations (PROs), government authorities, waste management operators, retailers, and consumers. Each stakeholder has distinct responsibilities:
1. **Producers** are responsible for paying fees to PROs or directly financing individual schemes. They must also handle the waste management of their products, including the organization of waste collection and treatment, and comply with data provision obligations like registering and reporting product quantities such as, registering with the national registry of producers, reporting product quantities placed on the market to PROs, creating product specs and allowing access to accounting systems for audits and finally monitoring and controlling obligations.
 2. **Producer Responsibility Organizations (PROs)** play a critical role in collecting fees from producers, financing the collection points, and managing waste treatment facilities. PROs must also contract with municipalities, retailers, and the informal sector to facilitate waste collection and recycling processes. They are responsible for substantial data management and control obligations to ensure compliance and effective operation.
 3. **Government Authorities** such as the Ministry of Environment are tasked with establishing the legal framework for EPR, ensuring compliance through regular checks, and managing data on product quantities and waste management and the achievement of the collection/recycling targets. They also play a crucial role in issuing

permits to PROs and individual schemes and taking enforcement actions against non-compliant entities, in addition to publishing annual reports on the overall performance of the EPR. Government agencies may also serve as a clearinghouse. This option involves a government agency acting as a central point for overseeing the EPR system. The agency's roles could include collecting and managing data from producers, ensuring compliance with EPR regulations, coordinating activities among various stakeholders, and facilitating the overall management of the system. This setup benefits from government oversight, which may enhance the transparency, accountability, and uniformity of the EPR system. Another government agency mentioned is the Environmental Protection Agency whose role is to coordinate and manage data by maintaining a database of all registered producers and their brands, collecting data on product quantities in the market and waste collection and determining market share of each PRO and individual scheme. Finally, the last authority mentioned is the Environmental Inspectorate which conducts inspections of waste collection and treatment facilities ensuring compliance and comparing waste quantities available at inspected sites with the quantities reported to EPA's information system.

4. **Waste Management Operators** finance the establishment or upgrading of waste management facilities and collaborate with PROs to manage the waste treatment processes. They must adhere to state-of-the-art technical standards, provide detailed waste-related data to government agencies, provide waste related information to the EPA's waste information system and monitor/control waste management facilities.
 5. **Retailers and Distributors** have financial and waste management obligations, including establishing collection points for waste electrical and electronic equipment (WEEE) and batteries and ensuring that these points meet quality standards.
 6. **Consumers** are encouraged to participate in the system by utilizing designated collection points and ensuring that waste is disposed of in a manner that aligns with the EPR framework.
86. Mihail also highlighted the financial flows within the EPR system, detailing how funds are transferred among stakeholders to support EPR activities, including the funding of control measures and compensation mechanisms for waste services. Challenges noted in the presentation include the need for improved coordination among stakeholders, enhancing government capacity to manage and enforce EPR systems, ensuring producer compliance, and maximizing the effectiveness of PROs.
87. In conclusion, he emphasized that effective EPR requires a collaborative approach among all stakeholders involved. The success of EPR systems is contingent upon robust enforcement mechanisms, transparent data management, and ongoing engagement from all parties to achieve the environmental objectives set forth by EPR policies. The clear delineation of roles and responsibilities, coupled with appropriate financial incentives and penalties, is essential for the successful implementation of EPR systems.

Financing EPR implementation

88. Mihail offered an in-depth examination of the financial mechanisms essential for implementing effective EPR systems. The presentation underscores the 'Polluter Pays' principle, advocating that producers should manage the environmental costs of their products at the end-of-life stage. This principle supports broader environmental sustainability by encouraging producers to minimize waste generation.
89. A significant portion of Mihail's presentation is dedicated to discussing the financing structures of EPR schemes. It detailed that the primary method for funding these schemes involve fees levied on producers based on the volume or weight of products they market. These fees are collected and managed by Producer Responsibility Organizations (PROs), which are central to the administration of EPR programs, overseeing waste management activities from collection to recycling and disposal. Fee calculations can vary depending on the type of waste, product category, and the level of environmental impact associated with the product.
90. The discussion on the calculation and consideration of EPR fees stressed the importance of fairness, suggesting that fees should be proportionate to the environmental impact of the producers' products. It also emphasized the need for cost-effectiveness in the operations of PROs to ensure efficient use of funds, advocating for transparency in financial dealings to maintain public trust and accountability. Fees paid by the producers have to truly reflect the end-of-life costs of their products since end-of-life costs can vary significantly based on product design, material composition, product lifespan and market conditions.
91. The concept of eco-modulation of producer fees has been introduced as a method to incentivize producers to design environmentally friendly products. By varying fees based on the environmental impact of products, this mechanism promotes the development of sustainable products and aims to reduce the overall environmental footprint of waste management and improving the efficiency of resource use.
92. Mihail also addressed the challenge of 'free riders', which are producers who do not pay their fair share towards the EPR system. It highlighted the importance of financial surveillance, such as data analysis and audits, to identify and enforce compliance among all producers. PROs use various methods to identify free riders, such as data analysis and audits. Once identified, free riders may be subject to penalties or legal actions to compel them to contribute financially.
93. Furthermore, he explored how revenues generated from the sale of recycled materials can potentially offset the costs associated with EPR schemes. The success of this model is contingent on market demand for recycled materials, advances in recycling technology, and supportive governmental policies.
94. Various forms of EPR responsibility are outlined from simple financial contributions where producers pay fees without direct involvement in waste management, to comprehensive models where producers are fully engaged in the operational aspects of waste management. The comprehensive model's financial responsibility are, through contacts with municipalities where producers work with municipalities to provide waste

management services, through partial organizational responsibility where producers are responsible for waste management but they may also be involved in some aspect of the organization, and finally through full organizational responsibility where the producer has a significant role in the organization such as financing, collection and treatment.

95. In summarizing, the presentation advocated for a strategic approach to the implementation of EPR, suggesting gradual rollout, optimization of fee structures, and the use of public-private partnerships to mitigate the initial financial and logistical challenges. This comprehensive overview served as a guide for stakeholders in understanding the complexities of financing EPR implementation and underscored the necessity of collaborative efforts to achieve sustainable waste management objectives.

Stakeholder Engagement for a Successful EPR Implementation – Example from Jordan

96. Mr. Sulaiman detailed the implementation strategies and stakeholder engagement processes for setting up an EPR system in Jordan, particularly for packaging materials. The project, funded by the Federal Ministry for Environment, Nature Conservation, Nuclear Safety and Consumers Protection (BMUV) and implemented by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, is set to run from April 2023 until potentially November 2025. It aims to introduce an EPR system that not only finances the necessary infrastructure and technological developments, such as recycling plants, but also encourages better product designs, aiding Jordan's transition to a circular economy.
97. The project involved multiple key partners, including the Ministry of Environment (MoEnv), the Jordan Chamber of Industry (JCI), the Jordan Chamber of Commerce (JCC), the Ministry of Local Administration (MoLA), and the Greater Amman Municipality (GAM), the largest waste collector in the country. This extensive collaboration underscored the project's holistic approach to stakeholder engagement, which is crucial for the successful and sustainable implementation of the EPR system.
98. He outlined the engagement process from 2017 to 2024, noting initial workshops held to familiarize local stakeholders with the EPR concept due to a lack of experience and knowledge in the region. These workshops, along with numerous coordination meetings with various national and international stakeholders, helped pave the way for a well-informed and cooperative environment conducive to implementing the new system.
99. Significant milestones in the project include the establishment of a legal framework with the Waste Management Framework Law No. 16 of 2020, which stipulates the implementation of an EPR system. By 2022, the foundational structures of governance were set, including a steering committee and the approval of EPR instructions published in the official gazette. Moreover, a registration portal for obligated enterprises was established, preparing data reporting and compliance tracking.
100. Looking ahead to 2025, the project is focused on finalizing the location for the PRO Unit, a crucial element in the EPR system, responsible for managing the operational aspects of waste collection and recycling. The next steps involve defining the obligated companies, registering them in the system, and starting the collection of EPR fees by January 1, 2025.

101. In conclusion, the presentation not only provided a comprehensive blueprint of how Jordan aims to integrate EPR into its waste management policies but also highlighted the critical role of stakeholder engagement in ensuring the adaptability and success of environmental policies. It exemplified a strategic and collaborative approach to environmental management that could serve as a model for other regions in West Asia and beyond.

EPR experiences on e-waste

102. Mr. Pascal Leroy provided an extensive overview of the principles, implementations, and impacts of EPR within the context of Waste Electrical and Electronic Equipment (WEEE) management. He focused on enhancing sustainable practices through responsible and circular management of end-of-life electrical products.

103. Pascal began by delineating the nature and scale of the problem, emphasizing the substantial volume of electronic waste generated and managed annually, comparing the weight of collected e-waste to significant structures like the Eiffel Tower to illustrate the magnitude. He highlighted the global effort spearheaded by the WEEE Forum, which includes 52 producer responsibility organizations operating across all continents, collectively managing the recycling of millions of tonnes of e-waste annually.

104. Key points from the presentation included a detailed discussion on the principles that the WEEE Forum champions, such as ensuring a level playing field and setting a high environmental standard. These principles are essential for maintaining the integrity and effectiveness of EPR schemes globally.

105. Pascal extensively discussed the strengths and weaknesses of EPR within WEEE legislation over the past twenty years. Strengths highlighted include the establishment of a vast ecosystem for e-waste management, improvement in environmental standards, and significant cost absorption by manufacturers. However, he also pointed out several weaknesses such as the uneven playing field, the issue of free-riders, ineffectiveness in reducing the volume of WEEE generated, and a lack of circularity levers, which hinder the full realization of EPR's potential.

106. Pascal also provided an in-depth look at the legislative growth and the establishment of a more structured legal framework over the years, from a nascent stage with few registered producers and little market intelligence to a robust system with clear laws, multiple producer responsibility organizations, and significant data on WEEE flows. Furthermore, he addressed the collaborative efforts necessary for achieving circularity in waste management, emphasizing that without collaboration among all stakeholders, circularity cannot be achieved. He also reviewed various methodologies to improve collection rates and stresses the need for integrating all actors within the legislative framework to enhance collection and recycling rates.

107. In terms of actionable insights and future orientations, his presentation discussed several grant-funded projects that have significantly contributed to research and

innovation in e-waste management. These projects have facilitated the development of new technologies, improved regulatory frameworks, and created more sustainable business models.

108. Lastly, Pascal provided considerations for future policies and strategies aimed at enhancing the effectiveness of EPR schemes. These include redefining collection targets, engaging all relevant stakeholders, promoting circularity through product design and life cycle management, and ensuring robust enforcement of regulations to counteract challenges such as online free-riding.
109. This comprehensive overview underscored the critical importance of evolving EPR frameworks to manage WEEE more effectively, ensuring environmental sustainability, and supporting the transition towards a circular economy. Pascal concluded with a call to continue enhancing the mechanisms of EPR to ensure they are robust enough to handle the challenges posed by the increasing volume and complexity of electronic waste.

Challenges and Opportunities for EPR Implementation in West Asia

110. Dr. Hasan presented an insightful analysis of the challenges and opportunities related to the implementation of Extended Producer Responsibility (EPR) in the West Asia region, particularly focusing on GCC countries. Dr. Hasan, a notable figure in environmental engineering and waste management, leveraged her expertise and regional insights to discuss the current landscape, strategic responses, and future directions for waste management in these countries.
111. Dr. Hasan began by framing Solid Waste Management (SWM) as a significant global challenge, with specific mention of the sustainability threats faced by West Asia including water, energy, food security, and impacts on biodiversity, pollution, and climate change shown through the WEF (Water-Energy-Food) Nexus. She emphasized the global shift towards circular growth models away from traditional linear ones, which have significantly strained key resources. The presentation noted that despite the sustainable visions of governments in most countries, a large portion of solid waste still ends up in landfills, causing adverse impacts on health, environment, economy, and society.
112. Dr. Hasan discussed the Integrated Solid Waste Management (ISWM) approaches through national and regional sustainable strategies, focusing on adopting circular economy principles and collaborative efforts. These strategies aim to address the challenges posed by current waste management practices by enhancing resource conservation, diversifying energy sources for energy security, and managing waste sustainably.
113. The core of the presentation is the detailed exploration of the opportunities and challenges in implementing EPR in the region. Dr. Hasan identified regulatory hurdles, such as the need for comprehensive regulations and ensuring compliance among producers, as major challenges. Economically, implementing EPR programs could lead to additional

costs for producers, potentially affecting pricing for consumers. However, the opportunities of EPR include shifting financial and lifecycle waste management responsibilities from governments and consumers to producers, which could foster resource conservation, enhance product design innovation, and stimulate economic diversification. EPR can also help achieve several Sustainable Development Goals (SDGs), particularly SDG 12 on responsible consumption and production.

114. Dr. Hasan concluded that EPR holds great potential to promote sustainable production and reduce waste generation in West Asia. She called for a collaborative effort among all stakeholders to overcome regulatory challenges and address economic implications effectively. Recommendations for achieving these goals include enhancing community awareness on sustainable consumption, developing waste management markets regionally, and investing in sustainable waste management technologies.

115. She concluded with the following points:

- Extended Producer Responsibility (EPR) offers significant potential for fostering sustainable production practices and minimizing waste.
- Addressing regulatory challenges and navigating the economic effects of EPR will require cooperation among all stakeholders.
- By embracing innovative approaches and ensuring robust enforcement, EPR can serve as a powerful mechanism for advancing a circular economy and reducing the environmental impact of products.

VIII. Session 6: Concluding

116. Mr. Iyngararasan Mylvakanam, UNEP West Asia Office, concluded the workshop by highlighting the following key observations:

1. Waste management remains a major environmental challenge across many West Asian countries. In response, Extended Producer Responsibility (EPR) is starting to gain momentum throughout the region.
2. Two countries (Kingdom of Saudi Arabia and Jordan) have already begun developing EPR frameworks tailored to their national contexts to promote circularity. In other countries, discussions are still in the initial stages. Sharing experiences at both the regional and national levels, combined with targeted support, will help advance circular economy efforts across the region.
3. The workshop served as a valuable platform for coordination and information sharing on waste management across West Asian nations. There is a need to continue this regional forum annually and promote targeted EPR-related actions at the national level.

In closing, he thanked Bahrain's Supreme Council for Environment for hosting the workshop in Bahrain and UNEP-IETC and other resources persons for their substantive contributions. He also expressed gratitude to all participants for their active engagement throughout the event.

IX. Contact

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October/2024

Annex 1: List of Participants

#	Name	Country	Institution	Phone number	email
Member States					
1.	Mohamed Maki Aman	Bahrain	Supreme Council for Environment (SCE)		
2.	Yusuf Yaqoob Ajoor	Bahrain	SR Environmental Specialist, SCE		
3.	Noor Ebrahim AlHammadi	Bahrain	SR Environmental Specialist, SCE		
4.	Ali Shaker Khamdan	Bahrain	Volunteer • Environmental Monitoring and Protection Directorate, SCE		
5.	Sadiq Salah Rahma	Bahrain	SR Environmental Specialist • Waste Management Section, SCE		
6.	Sayed Mohammed Abdaljaleel	Bahrain	Ministry of Industry and commerce		
7.	Makki Imran	Iraq	Director of Babylon Environment Directorate, Ministry of Environment		
8.	Hiba Za'balawi	Jordan	Head of Solid waste Management and		

			EPR Section, Ministry of Environment.		
9.	Bader Almasoud	Kuwait	Senior Civil Engineer, The Environment Public Authority		
9.	Mr. Bassam Sabbagh	Lebanon	Ministry of Environment		
10.	Yaser Abushanab	Palestine	Acting Director General of Environmental Protection, Environment Quality Authority		
11.	Mr. Mohammed Osailan	Kingdom of Saudi Arabia	National Centre for Waste Management		
12.	Wejdan Alqarni	Kingdom of Saudi Arabia	National Centre for Waste Management		
10.	Munirah Al Saed	Kingdom of Saudi Arabia	National Centre for Waste Management		
11.	Lulwah Al Saeed	Kingdom of Saudi Arabia	National Centre for Waste Management		
12.	Rana Hmaideh	Syria	Directorate of Planning and International Cooperation, Ministry of Local Administration and Environment		
13.	Yasser Al Ghopir	Yemen	Director General of Environmental Policies and Programs, Ministry of Water and Environment		
14.	Resource Persons				
15.	Mihail Acehob	Bulgaria			
16.	Yaser Suleiman	Jordan	GIZ		
17.	Sumaya Yusuf Hasan	Bahrain	AGU		
18.	Abdul-Majeid Haddad	Lebanon	UNEP West Asia Office		

19.	Iyngararasan Mylvakanam	Lebanon	UNEP West Asia Office		
20.	Felipe Dall	Japan	UNEP IETC		

Annex 2: Agenda

Day 1 – Tuesday, 17 September 2024

SESSION 1: Opening and Introduction	
9:30–10:30	<ul style="list-style-type: none"> • Opening remarks • Regional launch of the Global Waste Management Outlook 2024 • Overview of the event's objectives and agenda. • Introduction of participants
10:30–10:45	Tea Break
SESSION 2: What is Extended Producer Responsibility	
10:45 – 13:00	10:45- Presentation 1 (Mihail): <i>Basics of EPR</i> Facilitated discussion (Q&A)
	11:30- Presentation 2 (Panate: online): <i>EPR- its intended consequences and operating conditions</i> Facilitated discussion (Q&A)
	12:15- Presentation 3 (Felipe): Evolution and current status EPR implementation including MEAs Facilitated discussion (Q&A)
	12:40- Presentation 4 (Alexander Batteiger, GAP): Global Action Partnership for EPR Facilitated discussion (Q&A)
13:00 – 14:30	Lunch Break
SESSION 3: Waste Management Panoramas in West Asia	
14:30 – 15:30	14:30- Country presentations on national waste management panoramas (10 mins each including Q&A)

Day 2 – Wednesday, 18 September 2024

SESSION 4: Waste Management Panoramas in West Asia (cont.)	
09:00 – 10:00	09:00- Country presentations on national waste management panoramas (10 mins each including Q&A)
SESSION 5: How to Develop and Implement Extended Producer Responsibility (EPR)	
10:00	10:00- Case studies presentation 1 (Mihail): Key stakeholders in EPR Schemes <ul style="list-style-type: none"> • Facilitated discussion (Q&A)
11:30	Tea Break
11:45	11:45 - Case studies presentation 3 (Mihail): Financing EPR implementation Facilitated discussion (Q&A) 12:15 - Presentation 4 (Yaser): Stakeholder engagement in EPR implementation / (Pascal from WEEE Forum: online) EPR experiences on e-waste. Facilitated discussion (Q&A)
12:45 – 14:00	Lunch break
	14:00- Presentation 5 (Sumaya): Opportunities and challenges for implementation of EPR in West Asia <ul style="list-style-type: none"> • Facilitated discussion (Q&A)
SESSION 6:	Concluding
14:30 – 15:00	Key takeaways for the region and plan for the region (Summary of main findings and closing of the workshop)