

UNEA 7 associated event

The Network is the Solution: A Strategic Dialogue on Data, Science, and Knowledge Networks for a Circular Economy

7 December 2025 | 2pm-4pm (EAT) to be followed
by a Networking Reception at 4pm-5:30pm (EAT)

In-person: Tribe Hotel, Nairobi, Kenya
Online: Register here - bit.ly/NetworkIsTheSolution





Opening remarks

► Elisa Tonda, Chief, Resources and Markets Branch, Industry & Economy Division, UNEP

Co-facilitators



► **Adriana Zacarias-Farah**

Global Sub-programme Coordinator
Finance and Economic Transformations
UNEP



► **Rula Qalyoubi**

Global Sub-programme Coordinator
Science-Policy
UNEP

1. Scene-Setting Panel

Why We Must Bridge Science, Policy and Action to Achieve Circularity



Andrea Hinwood

Chief Scientist
UNEP



Charles Nyandiga

Regional Team Lead on
Environment
UNDP



Morris Mulu

Children and Youth Major
Group

2. Spotlight Talks

Science and Data Informing Strategic Decisions and Policy-Making



Sally Radwan

Director of Digital
Transformation, UNEP



Adam Stingmore

Chief Development Officer,
Standards Australia
International Standard
Organization (ISO)



Shahkira Parker

Senior Policy Advisor,
Department of Forestry,
Fisheries and the
Environment, South Africa



Sally Radwan

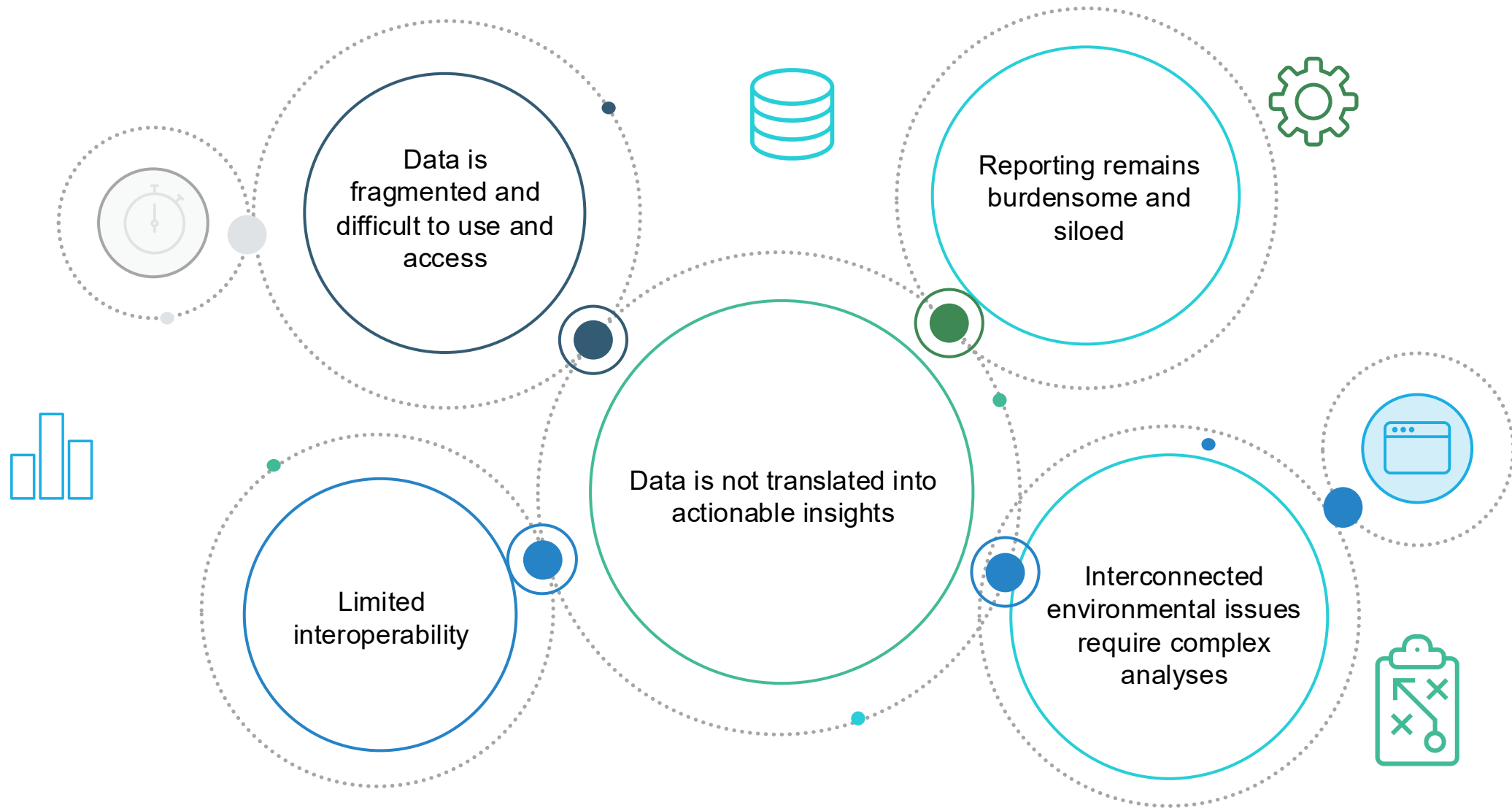
► Director of Digital Transformation,
UNEP

Science and Data Informing Strategic Decisions and Policy-Making:

Introduction to WESR & EnvironmentGPT

The Network is the Solution: A Strategic Dialogue on Data, Science, and Knowledge Networks for a Circular Economy

The Challenge: Abundance of Data, Scarcity of Insight



The Solution: The World Environment Situation Room (WESR) provides a trusted digital infrastructure where datasets converge



WESR @ UNEA-7

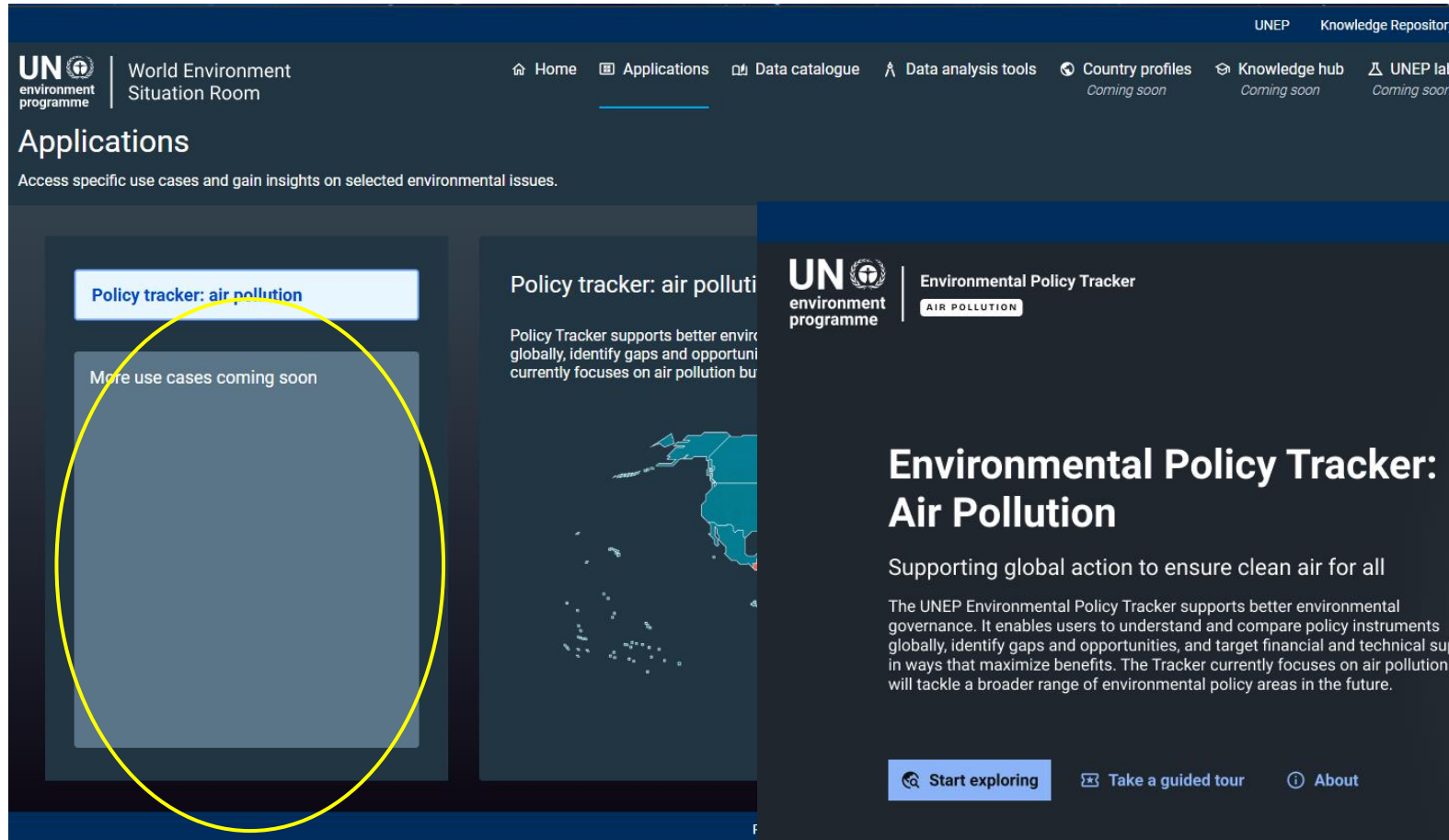
A Minimum Viable Product, including 3 of 6 planned features and 1 use case

The screenshot shows the homepage of the World Environment Situation Room (WESR). At the top right, it says "UNEP Knowledge Repository". On the left, the UN Environment Programme logo is followed by "World Environment Situation Room". The main heading is "World Environment Situation Room", with a subtext: "As UNEP's flagship data and applications platform, WESR provides timely, reliable, and accessible environmental information to support evidence-based decision-making." Below this, there are six feature cards:

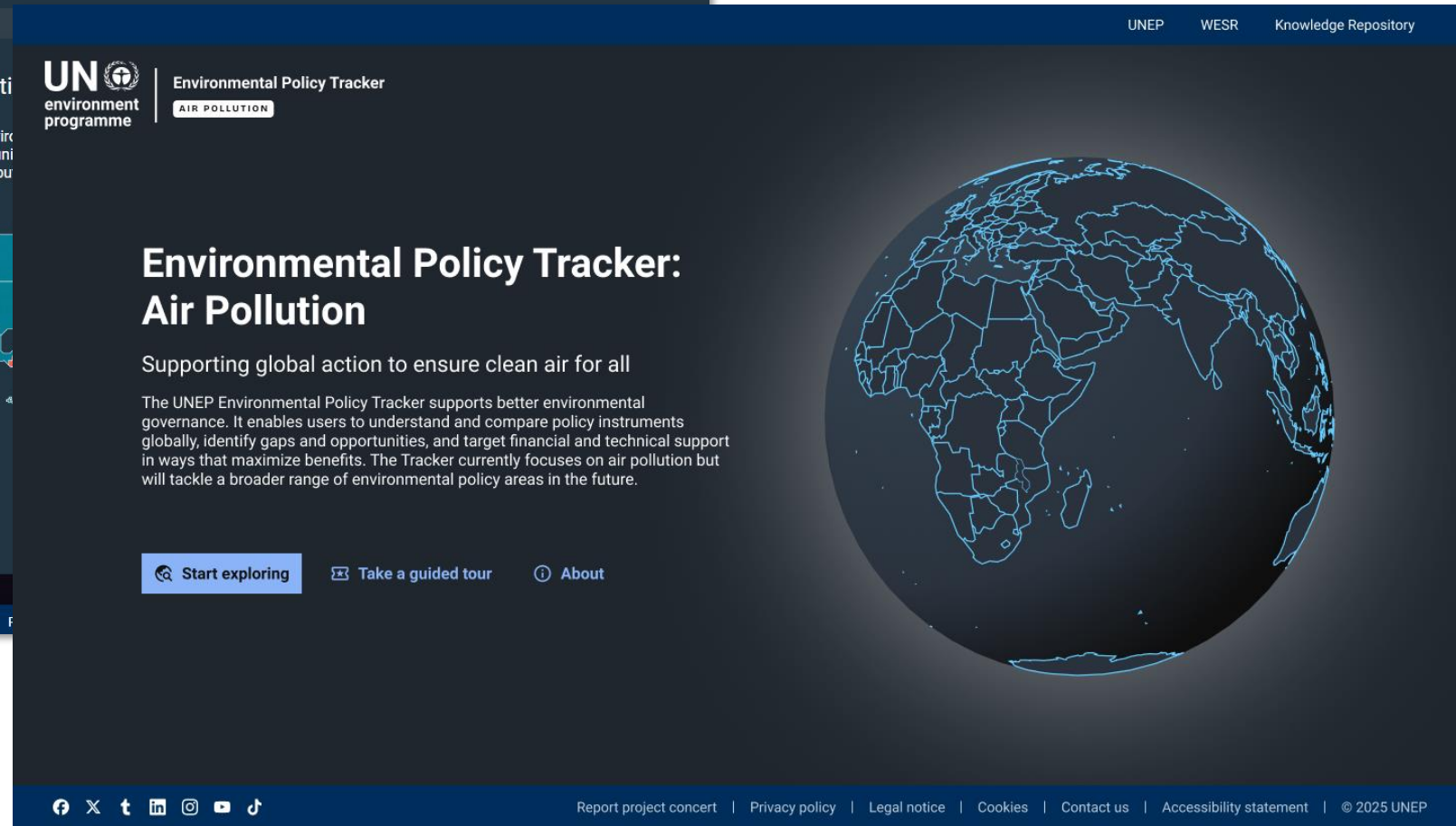
- Applications**: Start exploring →
- Data catalogue**: Start exploring →
- Data analysis tools**: Start exploring →
- Country profiles**: Coming soon
- Knowledge hub**: Coming soon
- UNEP lab**: Coming soon

The "Coming soon" text in the last three cards is circled in red. At the bottom, there is a footer with links: "Report project concern | Privacy policy | Terms of Use | Report Scam | Contact Us | © 2025 UNEP".

Applications: where all the “use cases” will live...



This is where a specific use case for Circular Economy can be created!



Environmental Policy Tracker

UNEP WESR Knowledge Repository

UN environment programme Environmental Policy Tracker AIR POLLUTION

OVERVIEW COUNTRY VIEW

Search: Search by country

Policy indicator: Air quality standard for PM2.5 (24-hour)

Pollutant: Fine particulate matter (PM...)

Measure: DALYs

Number Rate

Reset filters

National standard for PM2.5 pollution (24-hour mean)

- Meets WHO guideline (15 µg/m3)
- Meets interim target 4 (25 µg/m3)
- Meets interim target 3 (37.5 µg/m3)
- Meets interim target 2 (50 µg/m3)
- Meets interim target 1 (75 µg/m3)
- No standard
- Unknown

Year: 2025

DALYs attributable to ambient PM2.5

- 0-10,000
- >10,000-100,000
- >100,000-1,000,000
- >1,000,000-10,000,000

Year: 2020

About this map

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UNEP WESR Knowledge Repository

UN environment programme Environmental Policy Tracker AIR POLLUTION

OVERVIEW COUNTRY VIEW

Search: Search by country

Policy indicator: Diesel fuel sulphur content standar...

Pollutant: Select a pollutant

Measure: -

Number Rate

Reset filters

Diesel fuel sulphur content standards

Number of countries

Year: 2025

Maximum permitted sulphur content	Number of countries
10 ppm and below	82
11-50 ppm	39
51-500 ppm	27
501-5000 ppm	29
Above 5000 ppm	7
Unknown	12

Maximum permitted sulphur content	Percentage
10 ppm and below	42%
11-50 ppm	20%
51-500 ppm	14%
501-5000 ppm	15%
Above 5000 ppm	4%
Unknown	6%

Maximum permitted sulphur content

- 10 ppm and below
- 11-50 ppm
- 51-500 ppm
- 501-5000 ppm
- Above 5000 ppm
- Unknown

CHART

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Policy Tracker - Country Pages

UNEP WESR Knowledge Repository

Environmental Policy Tracker AIR POLLUTION

OVERVIEW COUNTRY VIEW

Kenya

Policy indicators Air pollution

Please select the year for the Policy Indicator

Year: 2025

- Ambient air quality standards
- Household air pollution
- International agreements
- Strategies and implementation
- Transport

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UNEP WESR Knowledge Repository

Environmental Policy Tracker AIR POLLUTION

Policy indicators Air pollution

— Back

Air quality standard for NO₂ (24-hour)

Nitrogen dioxide (NO₂) is a common traffic-related pollutant that irritates the airways and is linked to asthma, respiratory infections and reduced lung function, particularly in children. It also contributes to the formation of ground-level ozone and fine particulate matter. This indicator shows whether countries have a national 24-hour standard for NO₂ and whether that standard aligns with relevant WHO benchmarks. The World Health Organization (WHO) recommends that the 24-hour concentration of NO₂ should not exceed 25 µg/m³, based on the 99th percentile of daily values. WHO also provides interim targets of 120 µg/m³ and 50 µg/m³ for countries progressing toward full guideline alignment. For non-self-governing territories, values reflect the parent State standard unless territory-specific legislation is available. Actual regulatory frameworks may differ from those of the parent State.

	Unknown	No standard	Exceeds interim target 1	Meets interim target 1 (120 µg/m ³)	Meets interim target 2 (50 µg/m ³)	Meets WHO guideline (25 µg/m ³)
Kenya			●			
Compare with other countries	Select countries					
Estonia	×				●	
Iraq	×			●		
Myanmar	×	●				

Download as PNG

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Data catalogue

Federated data from different sources – circular economy data currently available from the Sustainable Consumption and Production Hotspots Analysis Tool (SCP-HAT)

The image displays two overlapping screenshots of the UNEP Knowledge Repository Data Catalogue interface. The top screenshot shows the search results page with 28 results. The bottom screenshot shows the detailed view of the 'SCP-HAT Raw Material Use Metrics' dataset.

Search Results Page:

- Search bar: Search datasets by title...
- 28 results
- Themes: Chemicals and pollution action, Climate action, Land and nature action
- Topics: All topics
- Geographical coverage: Global, Regional
- Keywords: All keywords
- Buttons: Apply filters, Clear
- Results per page: 9, 1 - 9 of 28

Dataset Detail Page: SCP-HAT Raw Material Use Metrics

- Back button
- Download data button
- ID: SCP-HAT Raw Material Use Metrics
- Last update: 2022
- Theme: Land and nature action, Climate action
- Data type: Statistical
- Geographical coverage: Global
- Keywords: Material productivity, Gdp, Domestic material extraction, Material footprint
- Description: This dataset presents SCP-HAT raw material use metrics from 1990-2022 on the country level. The Material Footprint indicator used to evaluate the use of raw materials by society and the achievement of the related SDGs. It measures the sum of all raw materials used along the supply chains of goods and services consumed in a country. Metrics in this dataset include Material Footprint (MF) (Million tonnes), Material Productivity (GDP/MF) (kg/\$), MF per capita (tonnes/capita) and Domestic Material Extraction (Million tonnes).
- Source: SCP-HAT

Data Analysis Tools: aka, the “DIY” section

Combine different datasets to create your own analysis “on the fly”


The image shows a screenshot of the UNEP Knowledge Repository's Data Analysis Tools interface. The interface is divided into several sections:


- Header:** UNEP Knowledge Repository, with navigation links for Home, Applications, Data catalogue, Data analysis tools, Country profiles, Knowledge hub, and UNEP lab.
- Left Panel:** "Data analysis tools" section with a "Back to datasets" link. It features a "SCP-HAT Raw Material Use Metrics" card with a "Data type" dropdown set to "Statistical" and an "Indicators" section with radio buttons for "Raw material use domestic material extraction" (selected), "Raw material use material footprint", "Raw material use consumption footprint", and "Raw material use material productivity".
- Map:** A world map showing data visualization. A legend for "Raw material use domestic material extraction (Million tonnes)" is visible, with values 2.773 and 102,015.137, and a "Year" dropdown set to 2022.
- Right Panel:** "Data analysis tools" section with a search bar and filters. It lists 28 datasets, including:
 - Air pollution exposure and impacts - PM2.5, NO2 and O3 (IHME):** A "Statistical" dataset with a link to "Lost health life years attributable to ambient PM2.5 X".
 - PFOS Passive Air Sampling from GMP2:** A "Geospatial" dataset with a link to "PFOS concentration in air annual average X".
 - Amendments to the Text of and Annexes Other than III and VII to the 1998 Protocol ...:** A "Party Status of the Amendments to the Text of and" dataset.
- Map (Right):** A world map showing data visualization. A legend for "Lost health life years attributable to ambient PM2.5 (DALYs)" is visible, with values 8.589 and 37,805,874.42, and a "Year" dropdown set to 2021. Another legend for "PFOS concentration in air annual average (pg m3)" is visible, with values 0.255, 0.58, 0.98, 1.285, and 2.57, and "Start Year" and "End Year" dropdowns set to 2019.
- Footer:** "Produced by United Nations Geospatial", "Report Project Concern", "Privacy Policy", "Terms of Use", "Report Scam", "Contact Us", and "© 2025 UNEP".


Another application example: EnvironmentGPT


Environment GPT is UNEP's first public beta environmental AI chatbot to translate science and data into strategic decisions and policies

 **Trusted, Up-to-Date Knowledge Base:** Draws from 200+ UNEP and partner reports, including GEO-7

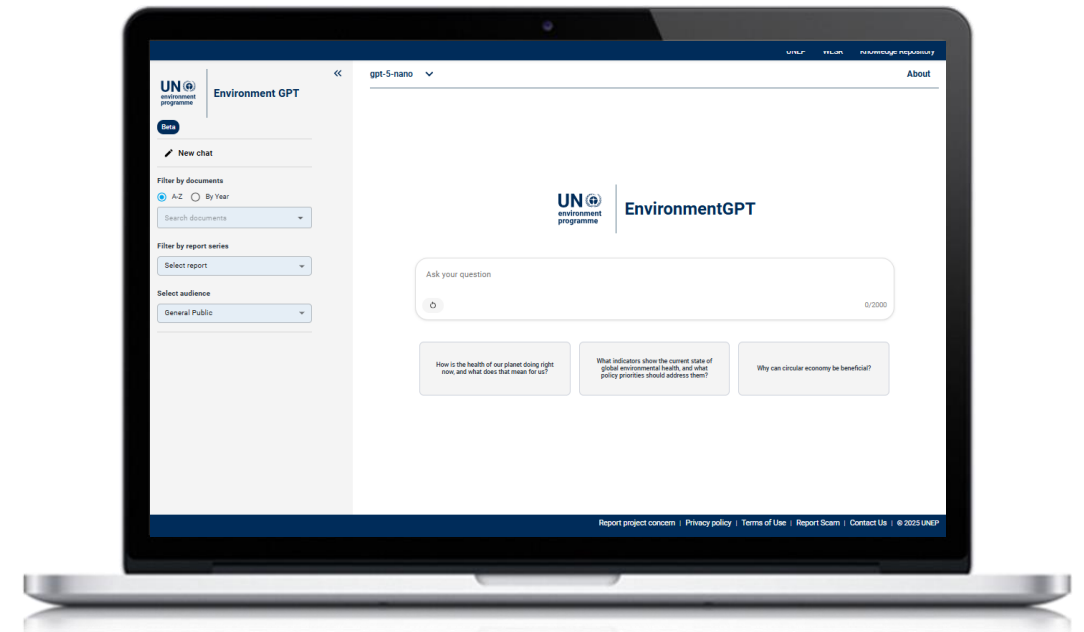
 **Advanced Filtering Options:** Retrieve answers from a specific publication or publication series (e.g., all Adaptation Gap Reports)

 **Audience-Specific Answer Modes:** general public, policymakers, scientists.

 **Multiple LLM Model Choices:** five models available with different strengths and sustainability profiles

 **Confidence Score for Evidence Strength:** signals when the system has strong or limited underlying evidence

 **Transparent, Verifiable Outputs:** every answer includes references and direct links



Application example: EnvironmentGPT

Audience: Policymakers

The screenshot displays the EnvironmentGPT application interface. At the top right, it shows 'UNEP WESR Knowledge Repository'. The main header includes the 'UN environment programme' logo and 'Environment GPT'. A 'Beta' badge is visible. On the left sidebar, there are options for 'New chat', 'Filter by documents' (with 'A-Z' selected), 'Filter by report series' (with 'Select report' selected), and 'Select audience' (with 'Policymakers' selected). The main chat area contains a question: 'What are the benefits of circular economy?'. The response is structured as follows:

Scope and urgency: Circular economy delivers material and energy savings across the value chain, keeps products at higher value, and reduces waste. The literature identifies significant energy and material savings and value retention when products are designed for reuse and resource loops are closed. In economic terms, expanding circular economy in the EU could unlock **EUR1.8 trillion by 2030** and create **1.2 to 3 million jobs**, while also strengthening global competitiveness and innovation. Importantly, multiple SDGs stand to gain, with strong co-benefits for SDG 6 (clean water and sanitation), SDG 7 (affordable and clean energy), SDG 8 (decent work and economic growth), SDG 12 (responsible consumption and production) and SDG 15 (life on land).[2][1]

Evidence shows that circular economy builds resilience and supports climate action. It helps deploy low-carbon infrastructure and optimizes resource use while reducing extraction and manufacturing impacts, including for cement and other materials. However, shifting to circular models entails significant transition costs and upfront investments in R&D, infrastructures, and skills. Nonetheless, the cross-sectoral benefits can be transformative, with potential total benefits of **EUR1.8 trillion by 2030** and job creation across regions, and a strong alignment with SDG 12. Policymakers should catalyze this by funding transition pathways and large-scale pilots.[4][2]

Beyond industry, circular economy also improves water and wastewater management, contributing to **SDG 2 (Zero Hunger)** and **SDG 6 (Clean Water and Sanitation)** by increasing wastewater treatment and opening revenue streams from recovered materials and by-products. The approach can monetize externalities and share best practices, extending benefits to health and climate mitigation. In Africa and other regions, these approaches link wastewater valorization with climate resilience and sustainable growth, illustrating how circularity drives economic diversification and service improvements while supporting climate and social objectives.[3]

References:

- [1] [Climate Change 2022: Mitigation of Climate Change](#), p. 1223
- [2] [GEO-6: Global Environment Outlook: Regional assessment for the Pan-European Region](#), pp. 256-258
- [3] [Sanitation and Wastewater Atlas of Africa](#), p. 145
- [4] [Climate Change 2022: Mitigation of Climate Change](#), p. 1327

Confidence: High - 83%

Environmental Impact 🌱

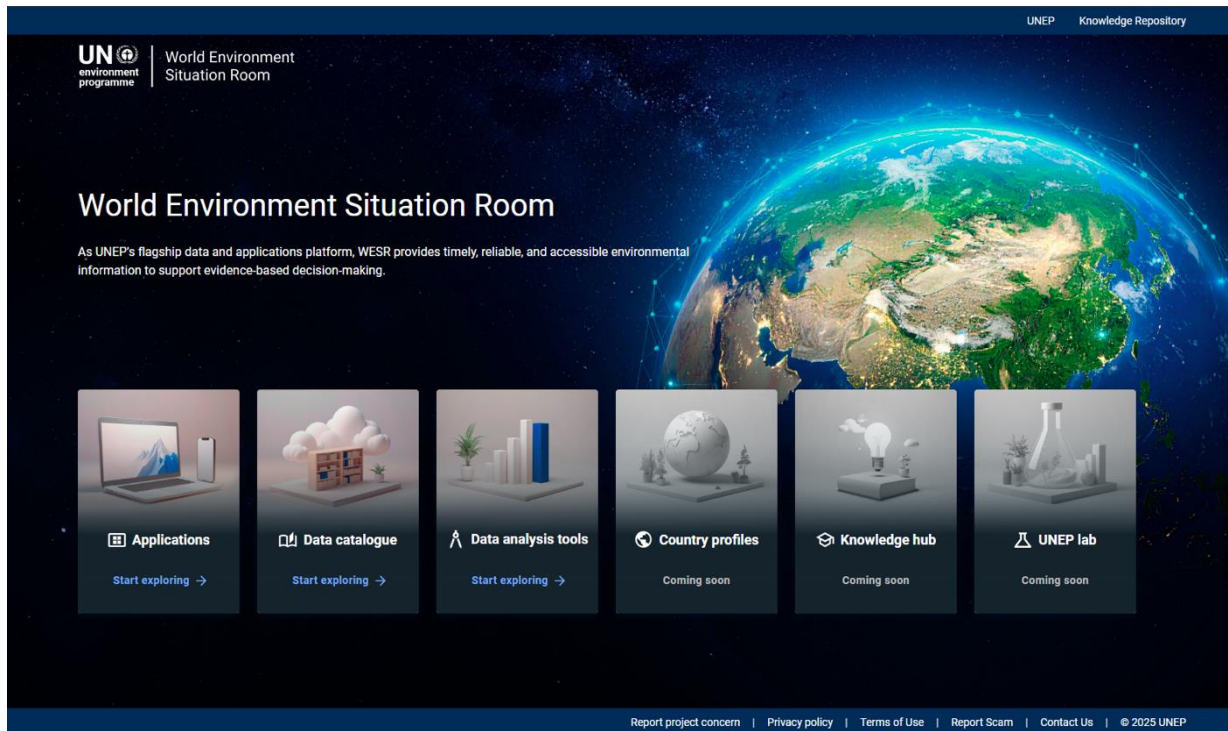
At the bottom, there is an input field 'Ask your question' with a character count '0/2000'.

Application example: EnvironmentGPT

Audience: General Public

The screenshot displays the EnvironmentGPT application interface. At the top right, navigation links for 'UNEP', 'WESR', and 'Knowledge Repository' are visible. The main header includes the 'UN environment programme' logo and the title 'Environment GPT'. A 'Beta' badge is present in the top left of the main content area. On the left side, there is a sidebar with a 'New chat' button and filter options: 'Filter by documents' (with 'A-Z' selected and 'By Year' as an alternative), a 'Search documents' input field, 'Filter by report series' (with a 'Select report' dropdown), and 'Select audience' (with 'General Public' selected). The main chat area shows a user input: 'what can I do to support a circular economy?'. The response is a list of five bullet points: 1. Pursue conscious consumerism: buying only what you need and avoiding over-packaged goods dramatically reduces waste and keeps materials circulating longer. 2. Reuse and recycle at home, plus compost food and garden scraps to shrink the waste stream and reduce landfill use. 3. Segregate unavoidable waste into three streams—food/garden, dry recyclables, and residual—to improve collection efficiency and overall recycling outcomes. 4. Use your buying power to back local businesses pursuing zero-waste and circular practices, which keeps materials circulating closer to home. 5. Support or advocate for regulations that require eco-design standards—durability, repairability, and recyclability—so products stay useful longer.[1]. Below the list is a 'References:' section with a link to '[1] Global Waste Management Outlook, pp. 79-80'. Further down, it shows 'Confidence: High - 75%' and 'Environmental Impact' with a leaf icon. The impact text states: 'This LLM call to gpt-5-nano model consumed 0.2±0.015 Wh of energy, 0.87±0.066 mL of water, 0.08±0.0059 gCO2eq of emissions, 0.16±0.0015 µgSbeq of critical minerals.' A note follows: 'This data is calculated automatically from the open-source tool EcoLogits, starting from: model; latency; and number of tokens. Consumption data might differ significantly from the real values.' At the bottom of the response area, there is a 'Share your feedback' checkbox and a note: 'Reference URLs are not maintained by UNEP and could be incorrect.' At the bottom of the chat area, there is an 'Ask your question' input field with a character count '0/2000'.

WESR Pilot launch at UNEA-7



You can interact with WESR at the Physical WESR space during UNEA

The Physical WESR is in the main lobby at the United Nations Office at Nairobi, next to the security desk



Join one of the demos – daily at 12:00 at the Physical WESR space



Show partners and Member States what UNEP's digital future looks like!

Reach out to organize a personalized demo

Beyond UNEA...

Use case co-creation: Circular Economy data solutions



Data federation: Ensure relevant datasets can be found on WESR



AI tools: Reach out to define and build user-centered AI use cases



Capacity building: Join our trainings and knowledge-sharing initiatives to strengthen digital, data and AI readiness



Thank you

Contact us at unep-chiefdigital@un.org



Adam Stingmore

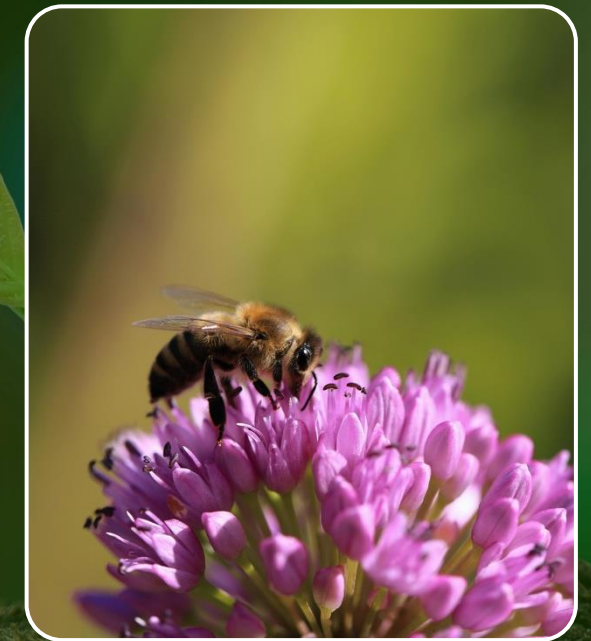
► Chief Development Officer,
Standards Australia, International
Standard Organization (ISO)

The role of standards in environmental data

**Adam Stingemore, Chief Development Officer
Standards Australia**



Environmental data is information collected about **the natural world and the impact of human activities** on the environment.



Why is Environmental Data important?

Wildfires in Europe

The *European Forest Fire Information System* collects environmental data due to extreme weather conditions.

Fire danger forecast for the next 7 days

Fire Danger Forecast (ECMWF, FWI anomaly)

- Low (< 0)
- Moderate (0 - 0.5)
- High (0.5 - 1.0)
- Very high (1.0 - 1.5)
- Extreme (1.5 - 2.0)
- Very extreme (> 2.0)

25 August - 1 September 2025

Wildfire situation in the EU - updated 27 August 2025

1,025,036 ha burnt since the beginning of the year	1,868 fires detected since the beginning of the year	38.68 Mt of CO2 emitted since the beginning of the year
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Top stories

- Zamin.uz: Forest fires in Europe reach 1 million hectares (7 hours ago)
- Anadolu Ajansı: Fires are 22% more severe in 2025, making it Europe's worst wildfire season on... (1 day ago)
- Balkan Insight: ARTE Europe Weekly: How Can Europe Get Wildfires Under Control? (10 hours ago)
- European Newsroom: EU coordinates firefighting forces as wildfires sweep southern Europe (2 days ago)
- BBC: Wildfires in Europe: record burning in Spain and Portugal (1 day ago)
- The Guardian: EU wildfires worst on record as burning season continues
- Sky News: Thousands evacuated as deadly wildfires sweep

Air Quality and Public Awareness

US Embassy began publishing air quality data online to inform US citizens about pollution level.

BeijingAir @BeijingAir

82K Tweets, 4 Following, 112K Followers

MetOne BAM 1020 and Ecotech EC9810 monitors, reporting PM2.5 and ozone readings. Format for each pollutant type: concentration; AQI; definition.

Chaoyang District, BEIJING
@StateAir.net
Joined July 2008

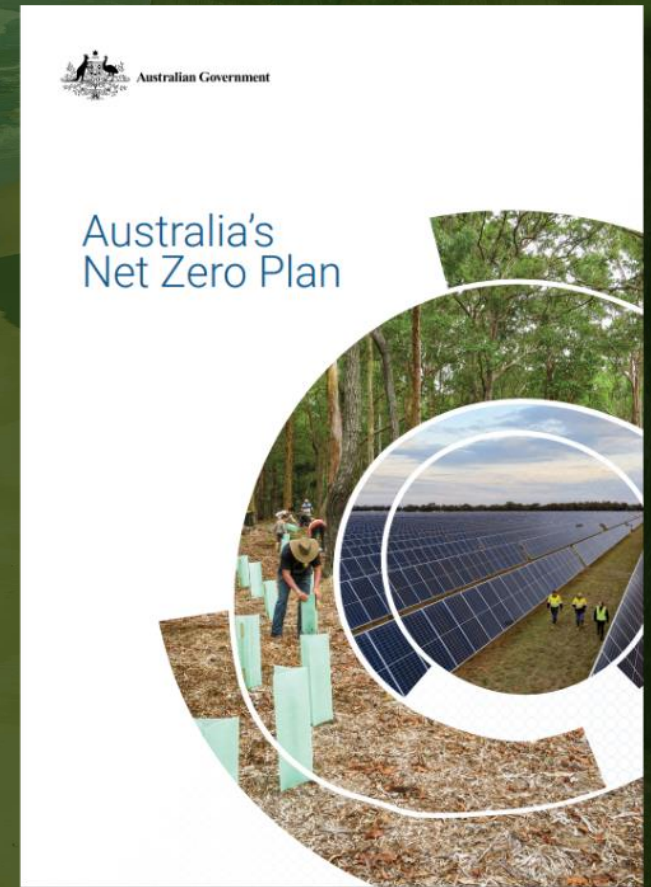
Tweets & replies

- BeijingAir @BeijingAir - 54m: 11-12-2017 19:00; PM2.5: 65.0; 156; Unhealthy (at 24-hour exposure at this level)
- BeijingAir @BeijingAir - 2h: 11-12-2017 18:00; PM2.5: 70.0; 158; Unhealthy (at 24-hour exposure at this level)
- BeijingAir @BeijingAir - 3h: 11-12-2017 17:00; PM2.5: 62.0; 154; Unhealthy (at 24-hour exposure at this level)
- BeijingAir @BeijingAir - 4h: 11-12-2017 16:00; PM2.5: 62.0; 154; Unhealthy (at 24-hour exposure at this level)

Why is Environmental Data important?

Australia's Net Zero Plan

- Cut emissions by 62 – 70 % below 2005 level by 2035 on the way to net zero by 2050
- Government has set Australia's ambition and committed over \$70 billion for decarbonising Australia's economy over the coming decades
- Without prioritising strong data collection, analysis, and projections we can't track, adjust or succeed in reaching net zero



Advancing the UN's Global Environmental Data Strategy

The United Nations' **global environmental data strategy (GEDS)** supports the use of environmental data to tackle the triple planetary crisis - climate change, pollution, and biodiversity loss.

To **support consultations on the strategy**, ISO asked Standards Australia to conduct this research to help governments, academia and organisations gain a better understanding of international environmental data standards.



What did we do?

The research involved mapping ISO's portfolio of environmental data standards based on 7 categories (20 subcategories) and identifying where they sit in the data lifecycle.

48

Technical committees

1122

ISO standards

(187 under development)

817

Referenced standards

from 51 SDOs

The standards referenced by each ISO publication were also mapped to provide a more holistic view of the global standards landscape.

Bringing the research to life - interactive dashboard

ISO Standards Sectors About ISO Insights & news Taking part Store Search

Natural Systems

Search

Back to category list Go to analysis

Air quality Arctic ecosystem Biodiversity Marine ecosystem Meteorology Soil quality Water quality

To explore these standards in more detail, please visit the [ISO Browsing Platform](#)

Technical Committee	Standard Code	Standard Title
ISO/TC 146/SC 2 - Workplace atmospheres	ISO/TS 21623:2017	Workplace exposure - Assessment of dermal exposure to nano-objects and their aggregates and agglomerates (NOAA)
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 13137:2022	Workplace atmospheres - Pumps for personal sampling of chemical and biological agents - Requirements and test methods
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 16107:2007	Workplace atmospheres - Protocol for evaluating the performance of diffusive samplers
ISO/TC 146/SC 2 - Workplace atmospheres	IEC 62990-2:2021	Workplace atmospheres - Part 2: Gas detectors - Selection, installation, use and maintenance of detectors for toxic gases and vapours
ISO/TC 146/SC 2 - Workplace atmospheres	IEC 62990-1:2019	Workplace atmospheres - Part 1: Gas detectors - Performance requirements of detectors for toxic gases
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 17736:2019	Workplace atmospheres - Determination of total isocyanate groups in air using 1-(9-anthracenylmethyl)piperazine (MAP) reagent and liquid chromatography
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 14382:2012	Workplace atmospheres - Determination of toluene diisocyanate vapours using 1-(2-pyridyl)piperazine-coated glass fibre filters and analysis by high performance liquid chromatography with ultraviolet and fluorescence detectors
ISO/TC 146/SC 2 - Workplace atmospheres	ISO/DIS 21438-3	Workplace atmospheres — Determination of inorganic acids by ion chromatography Part 3: Hydrofluoric acid and particulate fluorides
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 21438-3:2010	Workplace atmospheres - Determination of inorganic acids by ion chromatography - Part 3: Hydrofluoric acid and particulate fluorides
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 21438-2:2024	Workplace atmospheres - Determination of inorganic acids by ion chromatography - Part 2: Volatile acids, except hydrofluoric acid (hydrochloric acid, hydrobromic acid and nitric acid)
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 21438-1:2022	Workplace atmospheres - Determination of inorganic acids by ion chromatography - Part 1: Non-volatile acids (sulfuric acid and phosphoric acid)
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 15767:2009	Workplace atmospheres - Controlling and characterizing uncertainty in weighing collected aerosols
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 28439:2011	Workplace atmospheres - Characterization of ultrafine aerosols/nanoaerosols - Determination of the size distribution and number concentration using differential electrical mobility analysing systems
ISO/TC 146/SC 2 - Workplace atmospheres	ISO/DIS 13977-1	Workplace atmospheres — Assessment of dermal exposurePart 1: Framework for Dermal exposure assessment
ISO/TC 146/SC 2 - Workplace atmospheres	ISO/AWI 16200-2	Workplace air quality — Sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography Part 2: Diffusive sampling method
ISO/TC 146/SC 2 - Workplace atmospheres	ISO/AWI 16200-1	Workplace air quality — Sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography Part 1: Pumped sampling method
ISO/TC 146/SC 2 - Workplace atmospheres	ISO 16200-2:2000	Workplace air quality - Sampling and analysis of volatile organic compounds by solvent desorption/gas chromatography - Part 2:

756 Standards identified

663 Published

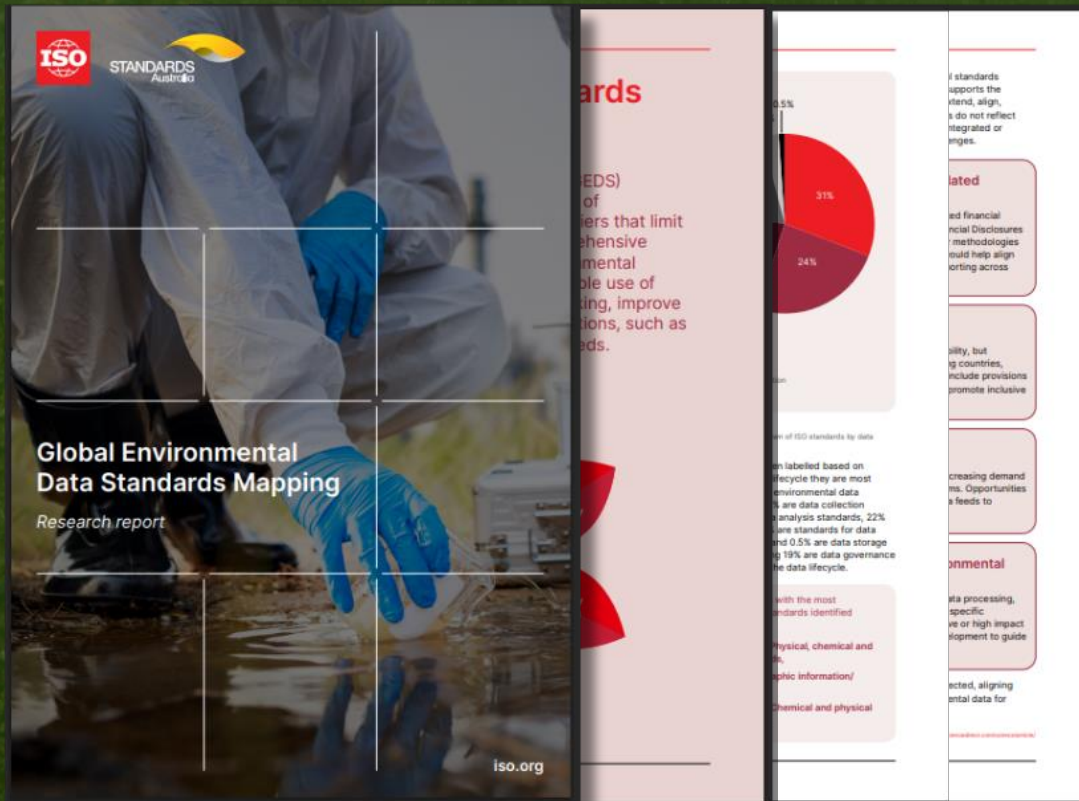
93 Under development

Technical committee: All

Data lifecycle stage: All

Clear all filters

Bringing the research to life



Research Report



Methodology Note

How can standards bodies better work with policy-makers...?

1. We can make it easier for you to find and use our standards
2. You can consider the good use of our standards within your contexts
3. We can continue to build out the tools that allow allow us all to better connect



STANDARDS
Australia

Contact: Adam.Stingemore@standards.org.au



Shahkira Parker

► Senior Policy Advisor: International Governance Management, Department of Forestry, Fisheries and the Environment, South Africa

LIFE CYCLE ASSESSMENT (LCA) AND EXTENDED PRODUCER RESPONSIBILITY (EPR) IMPLEMENTATION

South African Experiences of Using LCA in EPR Implementation

7 December 2025



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& the environment

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Background And Introduction

- According to the National Environmental Management Waste Act, 2009 (NEMWA). ***“Life cycle assessment; means a process where the potential environmental effects or impacts of a product or service throughout the life of that product or service is being evaluated.”***
- Section 18 of the NEMWA provides for the extended producer responsibility (EPR) Regulations for EPR implementation.
- The implementation of EPR is also a way of transitioning to a circular economy and the implementation of the National Waste Management Strategy 2020 initiatives.

Background And Introduction

- Extended Producer Responsibility (EPR) is an environmental policy Based on the 'polluter- pays' principle approach based on obliging producers to assume full responsibility (including EoL) for their products.
- EPR regulations cover some of SA's 'problematic products' - packaging, electronics and lighting, batteries, lubricant oil and pesticides - mandatory EPR as per Section 18 of the Waste Act
- EPR Regulations were gazetted in 2020, with the final Regulations published in 2021. Among other things, *the Regs require producers, brand owners and importers of identified products to undertake Life Cycle Assessment (LCA) studies; focussing on material minimisation; product design to facilitate reuse, recycling or recovery; and reduction of the environmental toxicity of their waste streams.*

South African LCA considerations

- Limited LCA expertise and capability locally and a lack of guidance on how LCAs should be conducted in order to meet various requirements (EPR, EU markets...)
- 2 Main standards (ISO 14040 and 14044) and a range of additional possible applicable standards for different purposes, can make it difficult to navigate the LCA landscape
- LCA is a standardized methodology, regulated by the ISO Standards which, however, provide only a general framework:
 - Leave room for interpretation on numerous methodological issues
 - Variations in the implementation of LCA
 - Lack of consistency and validity in the resulting environmental claims
- The aim of the Guideline project is to provide guidance on how to conduct LCA studies in accordance with both the EPR Regulations and export market requirements, providing a standardised set of recommendations regarding the various methodological choices that need to be made when conducting an LCA study

South African Experience of Using LCA in The Context of the EPR Law

- EPR Regulation 5: Measures to be Implemented by Producers;
- "(k) conduct a **life cycle assessment**, in relation to the identified product, in accordance with the applicable standards **within 5 years** of implementation of their extended producer responsibility scheme;"
- "(l) through the life cycle assessment as a minimum focus on the following:
 - (i) Minimisation of **material used** in the identified product;
 - (ii) Design of the product to **facilitate reuse; recycling or recovery**, without compromising the functionality of the product; and
 - (iii) **Reduction of environmental toxicity** of the resulting post - consumer waste stream;"
- LCA Guideline is currently being tested with Producer Responsibility Organisations and Research institutions
- Outreach / educational activities on the LCA tools and evaluation

South African Lessons On LCA

- ❖ To make reporting on LCA a requirement and to provide systems for reporting on LCAs.
- ❖ To provide for flexibility on the Life-cycle assessments not to be duplicated but conducted once over a period of 5 years.
- ❖ Do not reinvent the wheel and producers may have more capacity than the PROs.
- ❖ The process is a participatory from the development of the regulations.
- ❖ Compliance to LCA requirements is mandatory as it is compliance to Law.
- ❖ Partner with Research Organisations such as the CSIR in South Africa.

Recommendations

- ❖ **Furthering international cooperation (e.g. through the Global LCA Platform) could make your efforts more effective and impactful.**
- ❖ **International partnerships with organisations such as UNEP can go a long way in assisting a transition to circular economy that includes the LCA.**
- ❖ **Domestic partnerships with research organisations and institutions of higher learning on research, development and innovation.**

Thank You!

3. Dialogue

The Value of Practice: Learning from Experience,
Applied Solutions and Innovations



Margaret Kamau

Climate Change and
Green Growth Expert,
AfDB, ACEA



Daniel Grajales

Global Policy Manager,
International Chamber of
Commerce



Titus Karanja

Chief Executive Officer,
Fintech Frontiers Ltd



AFRICAN
CIRCULAR
ECONOMY
ALLIANCE

A Government-led coalition of African countries working to drive Africa's transformation to a circular economy that boosts economic growth, jobs and positive environmental outcomes, and to unlock new CE

opportunities through:

POLICY DEVELOPMENT



Scaling CE businesses
& INITIATIVES

LEADERSHIP &
ADVOCACY

THE 5 big bets

Thematic focus areas based on highly performing sectors

ACEA working groups

FOOD SYSTEMS

PACKAGING

ELECTRONICS

FASHION & TEXTILES

BUILT ENVIRONMENT

PRIORITY AREAS OF THE WORKING GROUPS

FOOD SYSTEMS

- Advocacy and knowledge sharing of best practices
- Co-host side events at the regional events
- Co-create knowledge pieces

PACKAGING

- Support the harmonization of rPET standards
- Knowledge sharing sessions on best practices - Global ERP efforts and plastic standards
- Technical support to countries for the creation of roadmaps for plastics

ELECTRONICS

- Knowledge sharing sessions on best practices
- Support the harmonization of ERP systems in countries

FASHION & TEXTILES

- Workshops/sessions for policymakers and SMEs to co-create policy recommendations for a sustainable textile and fashion industry
- Knowledge sharing sessions on best practices

BUILT ENVIRONMENT

- Knowledge sharing sessions on best practices
- Co-create knowledge pieces

The Africa Circular Economy Facility (ACEF)



Capacity building & policy development



Governments & non-state actors



Circular business development



Private Sector MSMEs (through business incubation/acceleration)



Advocacy & Knowledge sharing



The African Circular Economy Alliance (ACEA)

The only Trust Fund dedicated to promoting CE as an inclusive & Green growth strategy in Africa

4. Spotlight Talks

Leveraging Strategic Partnerships and Digital Solutions to Build Collective Intelligence and Amplify Impacts



Fabienne Pierre

Head, Green Growth
Knowledge Partnership
UNEP



Peter Dery

Director of Environment,
Ministry for Environment,
Science and Technology,
Ghana



**Jean-Marie BOPE BOPE
LAPWONG**

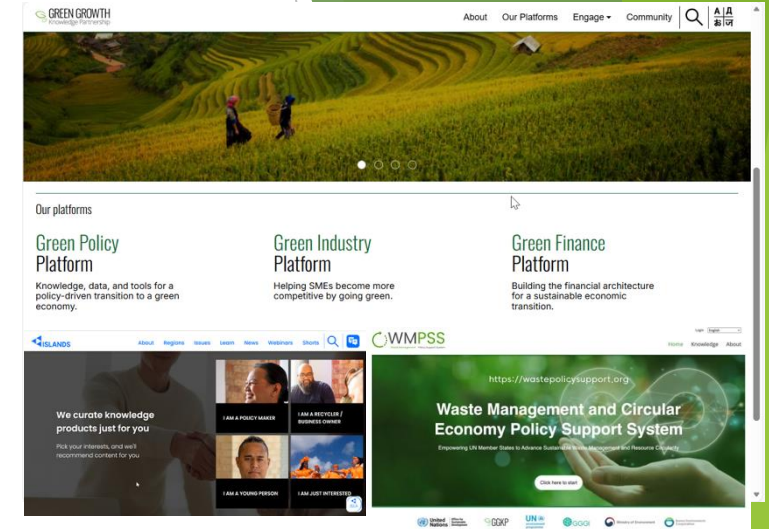
Head Officer and National
Coordinator of CCPM, Ministry
of Environment and Sustainable
Development, Democratic
Republic of Congo



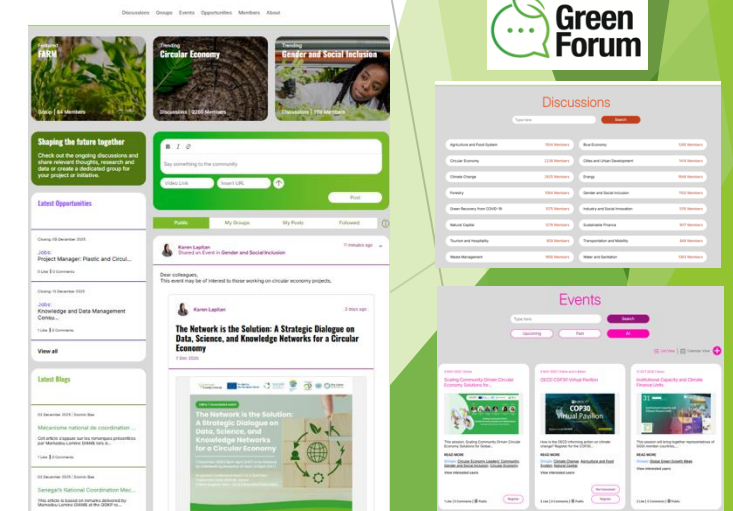
Fabienne Pierre

► Head, GGKP, UNEP

GREEN GROWTH Knowledge Partnership



200,000+ knowledge resources





Peter Dery

► Director of Environment, Ministry for Environment, Science and Technology, Ghana

Waste Management and Circular Economy Policy Support System (WMPSS)

A comprehensive system for gathering data, coordinating stakeholders, and providing analytics on waste management practices in Ghana, enabling informed decision-making and resource allocation for a sustainable future.



Why WMPSS Matters



Setting Baselines

Track progress against measurable waste management goals and targets



Resource Allocation

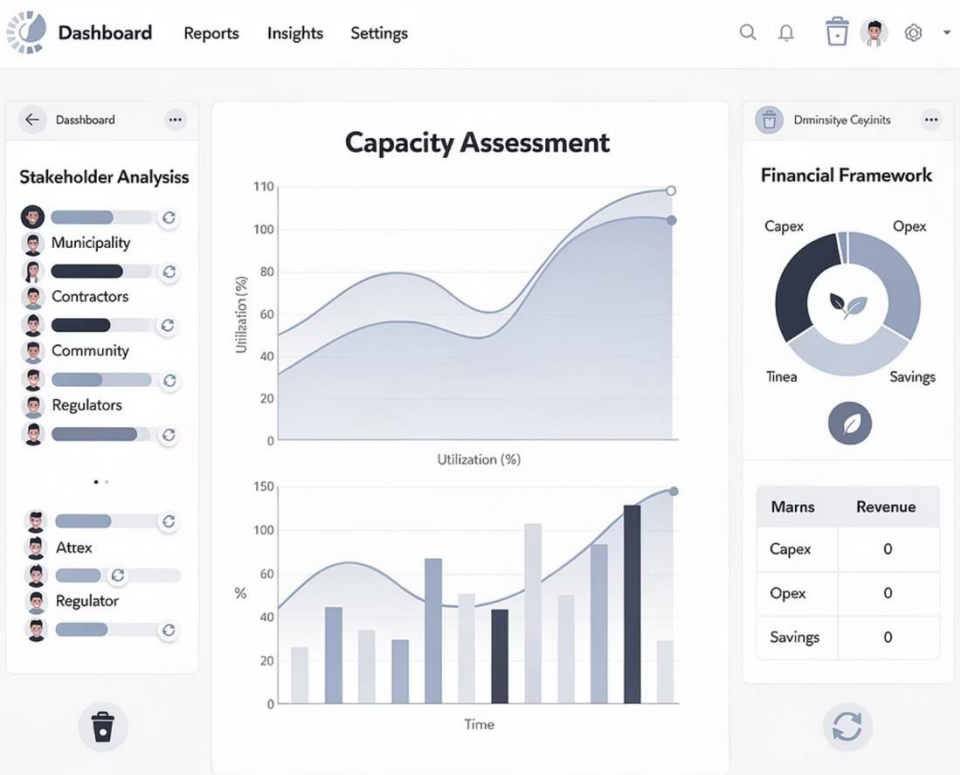
Form a basis for fair distribution of resources across waste management initiatives



Informed Decisions

Enable data-driven policy making even in environments with limited waste data

- Ghana named West Africa Regional Hub for the WMPSS
- The introduction of WMPSS to Ghana has been made possible through the relationship with the United Nations Office for Sustainable Development (UNOSD) and the Government of the Republic of Korea.
- The first Western Africa Regional workshop was organized August 26-28, 2025 to introduce participants to the system and its applications in policy formulation and resource allocation.



How WMPSS Works

Survey Section

Six components that assess critical enabling environments for policy making by gathering comprehensive data across the waste management value chain.

- Evaluates current capacity and infrastructure
- Identifies stakeholders and governance structures
- Assesses financial and monitoring frameworks

Reporting Section

Derives input data from surveys to perform analysis and produce actionable results with visual representations.

- Highlights strengths in current systems
- Identifies gaps and areas for improvement
- Determines resource needs and priorities

Six Survey Components

01

Capacity

Assesses adequacy of resources including required professionals for each aspect along the waste management value chain and available infrastructure

03

Stakeholder Engagement

Identifies key stakeholders from private and public sectors, assesses coordination in planning, and evaluates awareness creation and policy dissemination

05

Monitoring

Assesses data collection on waste, levels of compliance with regulations, and progress toward nationally set targets

02

Public Governance

Evaluates the National Plan, Institutional Framework, and Legal and Regulatory Framework for managing waste in the country

04

Finance

Examines waste management provisions in national budgets, local authority funding independence, and stakeholder incentivization for waste management

06

Status

Provides quantitative assessment of waste management practices at the national level



Key Stakeholders in Data Collection



Government Ministries

Ministry of Local Government, Chieftaincy and Religious Affairs (MLGCRA), Ministry of Finance (MoF), Ministry of Agriculture (MoA), and Ministry of Environment, Science and Technology (MEST)

Provide policy and budgetary data



Private Facilities

Privately managed recycling and treatment facilities contribute operational data and best practices



Waste Sites

Public and privately managed landfills and dumpsites provide critical waste volume and management data

A stakeholder meeting is planned to engage these institutions, inform them about WMPSS, explain the need for their input, and demonstrate how their data will be updated and accurately entered into the system.



Continuous Improvement for Sustainable Impact

Ghana will continuously update data on the WMPSS annually to improve its performance of ensuring waste is well managed with the requisite input and fair distribution of resources to meet both local and internationally committed goals and targets.



Annual Data Updates

Regular collection and refinement of waste management data



Performance Enhancement

Continuous improvement in waste management practices



Meeting Targets

Achieving local and international sustainability commitments



Jean-Marie Bope Bope Lapwong

- ▶ Head Officer and National Coordinator of CCPM, Ministry of Environment and Sustainable Development, Democratic Republic of Congo



Leveraging Strategic Partnerships and Digital Solutions to Build Collective Intelligence and Amplify Impacts

- ▶ 1. The importance of digital solutions
- ▶ 2. The multi-sectoral benefits of digital solutions in science and knowledge
- ▶ 3. The support of UNEA Digital Hub



This section provides access to knowledge and includes resources shared by UNEP, Member States, and partners that support good practices in environmental aspects of minerals and metals management.

Filter by:

View all

Knowledge type +

Region +

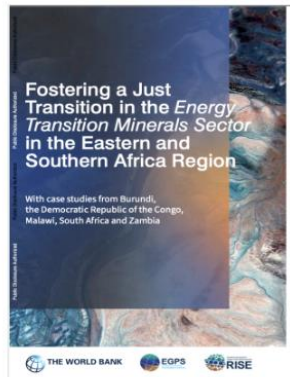
Theme +

Sector +

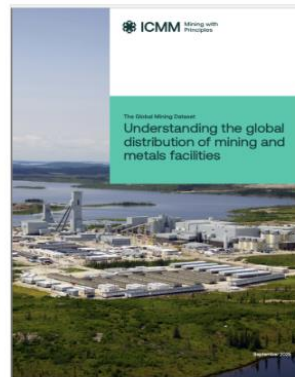
Focus area +

UNEA +

Organisation +



1 October 2025
Research



1 September 2025
Research

Digital Knowledge Hub on Environmental Aspects of Minerals and Metals

This platform was developed by the United Nations Environment Programme (UNEP), in consultation with Member States and other stakeholders, to serve as a global gateway to:

- Compile and disseminate information on good practices related to the environmental aspects of minerals and metals
- Provide access to capacity-building and online training
- Enhance cooperation and knowledge-sharing on environmental aspects of minerals and metals throughout their entire value chain.

The Hub is interoperable with other digital platforms and serves as an interactive space for exchanging information, engaging with new ideas, and learning from good practices globally.





Closing remarks

► Elisa Tonda, Chief, Resources and Markets Branch, Industry & Economy Division, UNEP