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INTERNATIONAL CONFERENCE

on 'Integrating Sustainable Waste Supply Chain Logistics and Low-carbon Pathways for a Circular Economy'

Book of Abstracts of Research Papers

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International Conference on Integrating Sustainable Waste Supply Chain Logistics and Low-Carbon Pathways for a Circular Economy

Book of Abstracts of Research Papers

India Habitat Centre, Delhi | 17 January 2026

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ABOUT THE CONFERENCE

The International conference centered on the theme “Integrating Sustainable Waste Supply Chain Logistics and Low-Carbon Pathways for a Circular Economy” was conducted under the aegis of International Recycling Incubation Summit (IRIS) 2026, a flagship programme of the ICWMR. The conference was conceived as a platform to foster meaningful dialogue and collaboration among industry, academia, and government, with the objective of bridging existing gaps and advancing integrated solutions in the waste management sector.

The Conference was structured around **six thematic tracks**: Advanced Recycling Technologies; Optimisation Models for Waste Management Logistics; Circular Supply Chain Design for Low-Carbon Transition; Policy and Regulatory Frameworks for Circular and Low-Carbon Economies; Industrial Waste Management and Urban Mining; and Social and Behavioural Aspects for Low-Carbon and Circular Economy. These tracks reflected the multidisciplinary nature of the challenges and opportunities in transitioning toward a circular and low-carbon future. The Conference attracted a diverse and dynamic cohort of participants, including researchers, academicians, doctoral scholars, postgraduate students, and emerging professionals.

The success of the Conference was strengthened by the support of its partners- Pehel: SBI Cards and Payment Services Limited, CSR Initiative served as the Principal Partner, while the Green Gene Enviro Protection & Infrastructure Pvt. Ltd. (GEPIL), Luthra Group joined as the Associate Partner. The conference also benefited from the collaboration of esteemed Knowledge Partners, including Federation University, Australia; the United Nations Centre for Regional Development (UNCRD); the Global Waste Cleaning Network, UK; and Waste-to-Energy Research and Technology Council (WtERT), USA. Their collective expertise and commitment played a vital role in enhancing the academic rigor, global perspective, and practical relevance of the summit.

PREFACE

It gives us immense pleasure to present the Book of Abstracts of Research Papers for the International Conference on "Integrating Sustainable Waste Supply Chain Logistics and Low-Carbon Pathways for a Circular Economy", organised under the aegis of IRIS 2026. This book brings together a diverse set of research contributions that reflect the growing global commitment to advancing sustainable waste management, circular economy approaches, and low-carbon development pathways.

The International Conference was conceived as a platform to foster dialogue across academia, industry, government, civil society, and international organisations. The abstracts compiled in this book represent not only scholarly inquiry, but also practical and policy-oriented thinking that can inform real-world transformation. They span a broad spectrum of themes, including advanced recycling technologies, waste logistics optimisation, circular supply chains, urban mining, policy and regulatory systems, and the social and behavioural dimensions of circular transition.

The enthusiastic response to the conference, reflected in the quality and diversity of submissions received from India and abroad, is a clear indication of the urgency and relevance of this discourse. This book compiles the abstracts of research papers presented at the International Conference. Full research papers may be obtained from ICWMR upon request. Each abstract included in this volume contributes to a larger collective effort to reimagine waste as a resource, strengthen material recovery systems, and build resilient, inclusive, and climate-aligned circular economies.

We sincerely thank all the authors, reviewers, session chairs, co-chairs, moderators, and institutional partners who contributed to making this academic exchange meaningful and impactful.

We hope that this Book of Abstracts of Research Papers will serve as a valuable repository of emerging knowledge, foster future collaborations, and inspire continued innovation in the field of recycling, resource recovery, and circular economy. As we move forward, may the ideas captured in these pages help shape policies, practices, and partnerships that enable a more sustainable and low-carbon future.

Editors
International Conference
Integrating Sustainable Waste Supply Chain Logistics & Low-Carbon Pathways for a Circular Economy

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ABSTRACTS

Biobased Vanillin Production from Lignin: A Byproduct from Biorefineries

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Abstract

Lignin, a by-product from bio-refining and paper industry can be depolymerised and converted to high-value aromatics by physicochemical and biological methods. Given the constraints of physicochemical methods, biological conversion is developed for lignin depolymerisation and bio-valorisation. Various microbes are equipped to degrade lignin completely or partially, accumulating aromatic intermediates of high value. In this study, the yeast Rhodotorula glutinis Y1 was targeted for its lignin degradation potential and production of value-added vanillin. Rhodotorula glutinis Y1 could grow well in minimal medium containing 0.5% lignin showing 37% maximum degradation which increased to 50% when co-metabolised with 1% glucose. The HPLC analysis of culture supernatants extracted with ethyl acetate showed presence of 11.4 ppm vanillin and 30.47 ppm ferulic acid. Medium engineering with complex N source and easily metabolisable C substrate and oxygenation, substantially enhanced vanillin accumulation during lignin degradation by R. glutinis Y1. Aeration at 200 rpm showed faster degradation and 1% glucose rather than complex C substrates (carboxy methyl cellulose, cellulose) leading to higher vanillin accumulation. Amongst complex organic nitrogen sources, peptone promoted growth and lignin degradation while soybean extract showed maximum accumulation of vanillin 3.95 g/L. Study revealed potential of Rhodotorula glutinis Y1 for bio-valorising lignin producing bio-based vanillin.

Keywords

Vanillin; Lignin; Biobased Production; Lignin Bio-Valorisation

Replacing Coal with Refuse Derived Fuel: A Pathway Toward Sustainable Industrial Energy

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Abstract

Growing industrial demand for energy has resulted in high CO_2 emissions, air pollution, and resource depletion due to increased reliance on coal, thereby necessitating sustainable and alternative energy sources. This study investigates the potential of non-recyclable municipal solid waste processed into Refuse-Derived Fuel (RDF) as a replacement for coal. Based on the findings, this could pave the way for future studies on the industrial application of RDF. The study focuses on technical feasibility, combustion characteristics, environmental impact, and economic viability. RDF samples were systematically prepared by collecting, segregating, shredding, drying, and forming them into pellets. These samples were analyzed for moisture content, calorific value, ash, volatile matter, fixed carbon, and elemental composition. Subsequently, the RDF samples were co-gasified in cement kilns and boilers to evaluate combustion performance, emission characteristics, thermal behavior, and the quantity and nature of ash produced. Results revealed that RDF has a calorific value of 18–20 MJ/kg, moisture content between 12% and 18%, ash content of about 10–14%, and volatile matter ranging from 65% to 70%, making it suitable for replacing 10–20% of coal. This substitution achieved a 14–22% reduction in CO_2 emissions and a 25–40% decrease in SOx emissions, while maintaining combustion performance at 31–32% and reducing fuel costs by 15–30%. The quantity of ash produced was found to be insufficient for cement clinker production. Overall, the findings indicate that RDF can partially replace coal in industrial furnaces without compromising performance, while reducing environmental impacts and promoting waste reuse. To encourage large-scale adoption, greater emphasis on legislative reforms, quality control, and pre-processing procedures would be beneficial. In general, RDF processing represents an economically viable and sustainable approach to reducing coal dependence in modern industries, while addressing both waste management and energy generation challenges.

Keywords

Refuse-Derived Fuel (RDF); Industrial Energy Substitution; Co-firing and Combustion Efficiency; Waste-to-Energy; Circular Economy

Energy Management Optimization for Hydrogen Vehicles Using Deep Reinforcement Learning

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Abstract

This work provides a reinforcement learning (RL)-based method for hydrogen-powered vehicle energy management strategy optimization. To enhance operational efficiency and extend system lifetime, the energy supplied by the hydrogen fuel cell and the onboard battery should be cleverly balanced. Using real or simulated vehicle load data, a bespoke environment is created whereby the state space comprises the battery State of Charge (SoC), hydrogen tank level (H_2), and instantaneous load demand. Continuous action space of the agent reflects the proportion of load satisfied by the fuel cell. We learn an optimal control policy using the Deep Deterministic Policy Gradient (DDPG) technique. The incentive mechanism is deliberately constructed to penalize too high depletion of hydrogen and battery resources and encourage effective energy distribution. By means of training and assessment, the agent gains effective management of energy resources under dynamic load situations. Multiple charts showing the change of SoC, hydrogen level, fuel cell utilization ratio, load demand, and cumulative incentives over time help to analyse the system's performance. Emphasizing the possibility of reinforcement learning in enhancing sustainable vehicle technology, the results show that the RL-based agent is able to make adaptive, efficient energy management decisions.

Keywords

Reinforcement Learning (RL); Deep Reinforcement Learning (DRL); Deep Deterministic Policy Gradient (DDPG); Hydrogen Fuel Cell Vehicles; Fuel Cell Optimization

Carbon-Aware Reverse Logistics for C&D Waste in Rapidly Growing Indian Cities: A Framework with Application to Visakhapatnam

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Abstract

India's fast-growing urban centers are witnessing an unprecedented rise in construction and demolition (C&D) waste, a critical yet under-addressed contributor to both solid waste volumes and embodied carbon emissions. This paper proposes a carbon-aware reverse logistics framework for managing C&D waste, optimized to reduce transport-related CO_2 emissions. Using publicly available emission factors and distance assumptions, we model three logistics scenarios: 100% local recycling, 100% remote landfilling, and a 50/50 hybrid. The resulting analysis, applied to 100,000 tonnes of C&D waste, shows that Scenario A (local recycling) emits 60% less transport CO_2 compared to Scenario B (remote landfilling). Scenario C demonstrates intermediate impact, highlighting how even partial adoption of local recycling infrastructure can cut emissions significantly. The emissions calculator and figure generated are based on transparent, open-source data and formulas, ensuring reproducibility. Compared to existing literature that focuses narrowly on landfill diversion, our approach emphasizes carbon optimization in waste logistics, a gap in current practice. The findings offer a replicable pathway for low-carbon construction waste management in cities like Visakhapatnam and beyond. The proposed framework can be used by municipalities and infrastructure planners to align urban circularity with decarbonization goals.

Keywords

Construction and Demolition Waste; Reverse Logistics Optimization; Carbon Footprint of Transport; Embodied Carbon Reduction; Circular Economy in Cities; Sustainable Waste Supply Chains; Carbon-Aware Infrastructure Planning; Urban Decarbonization Strategies

Minimum Wage Policy and Environmental Impact: Analyzing Toxic Emission Responses of U.S. Manufacturing Firms

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Abstract

This study investigates the environmental impact of minimum wage (MW) policy changes on manufacturing firms in the United States, particularly focusing on pollution emission intensities. While the economic effects of MW increases have been widely examined, little research explores their environmental consequences. Employing a staggered difference-in-differences approach with state-level exogenous MW changes and plant-level toxic emissions data from the Environmental Protection Agency (EPA), this paper analyzes how firms' pollution intensities are influenced by MW hikes. The findings reveal that high-profit capital-intensive firms exhibit increased toxic release intensities post-MW increase, while low- and high-profit labor-intensive firms tend to decrease their emission intensities, particularly in terms of point and fugitive air emissions. Mechanisms for these changes include reductions in green raw material use, decreased waste management practices, and shifts towards energy-efficient technologies. This nuanced analysis offers insights into how MW policies may indirectly shape environmental outcomes, informing policy on labor costs, environmental regulations, and health standards.

Keywords

Minimum Wage; Environment Protection Agency; Environmental Regulation

Smart Construction and Demolition: A Review of Emerging Technologies and Digital Tools

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Abstract

Rapid development and urbanisation have posed a significant challenge of construction and demolition waste management at various parts of the world. Countries, organizations and institutions and workforce are exploring various new emerging agile data driven Digital technologies to reduce the pressure of management and align the advancements in line with the sustainable development goals addressing SDG: 6,7,11,12,14. This study aims to identify the application of AI, ML, BIM, and GIS in various stages of CDWM, including estimation and prediction of C&D waste generation, On-Site Handling, Transportation, and Disposal. Research articles were extracted from Scopus-indexed, peer-reviewed electronic databases, including Science Direct and Springer Nature, to identify the Key applications and models used in AI, ML, GIS, and BIM to automate the process of CDWM. The time period selected for screening was limited to 2020-2025, to identify the latest advancements at a global level. The articles selected were quantitative, qualitative and literature reviews that gave a comprehensive idea of the applications and models. AI and ML and its integration with BIM and GIS showed significant progress to automate and streamline the CDWM processes. Few Industry cases have been identified using the AI powered CDWM. Policy & regulatory landscape that matters when you apply AI/ML to Construction & Demolition Waste Management (CDWM) was explored to understand the implementation barriers at the governance level. AI/ML applications are primarily limited to Waste sorting and recycling. Though the application of these Technologies has benefits but they come with their set of limitations and barriers posing challenges in implementation.

Keywords

Machine Learning; Construction and Demolition Waste; GIS; BIM; Artificial Intelligence.

Building An Environmental Footprint Framework for Steel SME's In India: Global Literature and Data Challenges

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Abstract

Small and medium steel manufacturers in India operate in fragmented clusters and convert semi-finished steel into finished products, they are numerous, heterogeneous, and under-measured. We first delineate the SME steel domain for India by process configuration and product scope, develop a cluster map covering induction-melting plus rerolling units and composite rerolling units and compile plant attributes relevant to carbon, energy and water footprint formation. We then synthesize environmental footprint and LCA literature across steel routes, extract system boundaries, allocation choices, data hierarchies, and reported intensity ranges and summarise environmental product declarations for high-volume products to establish reference bands. Using these sources, we benchmark average carbon, energy, and water intensities against international ranges and identify the principal drivers in SME contexts like raw material sourcing, furnace and electricity associated with, reheating control, rolling schedules, yield losses, and water consumption. Building on this baseline, how can we build a lean life-cycle framework suitable for SMEs where focus is on gate-to-gate primary metering where feasible, integration of vetted secondary factors for electricity, fuels, and water, and a transparent and easy to understand framework on data available through primary data collection. We decode how those are SME across identified clusters and then find out how primary data collection field protocols for utilities and water measurement, invoice triangulation, daily mass and energy balance closure checks and plant utilities can help us to quantify tCO2e per t-steel, GJ per t-steel, and m3/kL per t-steel. The output is a replicable framework to calculate footprints, enabling SMEs to evidence progress against net-zero pathways and sustainable/green steel production.

Keywords

Small and Medium Enterprise; LCA; Steel; Net Zero; Footprint; India

Wastewater into Energy: Green Hydrogen Production and Resource Recovery from Treated Wastewater

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Abstract

Hydrogen production from wastewater can address at the same time environmental, energy and economic problems, for example addressing growing renewable hydrogen demands and the environmental burden of organic wastewater streams. This review synthesizes and critically evaluates four major classes of technologies- electrochemical water electrolysis (alkaline water electrolysis, proton exchange membrane electrolysis, and anion exchange membrane electrolysis), photon-driven methods (photocatalytic and photoelectrochemical cells), biological routes (dark fermentation, photo- fermentation, and microbial electrolysis cells), and thermochemical processes (supercritical water gasification), with an emphasis on performance metrics, materials constraints, and integration considerations across real wastewater matrices. Key findings reveal that electrochemical electrolysis systems can achieve high-purity H_2 but require significant pre-treatment and chloride-tolerant materials to mitigate catalyst poisoning and parasitic side-reactions such as chlorine evolution; biological processes offer broader feedstock tolerance but are limited by low molar hydrogen yields and scale-up challenges; and photon-driven methods demonstrate proof-of-concept pollutant-assisted H_2 evolution yet suffer from low solar-to-hydrogen efficiencies under complex effluent conditions. Thermochemical gasification of high-solids sludge streams avoids the need for drying and provides a hydrogen-rich gas, but salt precipitation, tar formation, and reactor materials durability remain significant barriers. Across all pathways, pre-treatment barriers, electrode/catalyst durability, and standardization of performance metrics emerge as recurrent challenges limiting practical deployment. The outlook emphasizes hybridization strategies that combine renewable power with robust electrochemical and biological systems, materials innovations for impurity tolerance, and integrated techno-economic assessments with energy recovery metrics. The main takeaway of this paper is that while multiple wastewater-to-hydrogen pathways are scientifically and technologically feasible, their sustainable implementation requires coordinated advances in materials science, reactor engineering, and systems integration to overcome feedstock variability and enhance overall energy and economic performance.

Keywords

Green Hydrogen; Resource Recovery; Wastewater-to-Hydrogen; Hybridisation Strategy

Circular Economy for Viksit Bharat Strengthening India's Largest Recyclables Supply Chain

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Abstract

India currently generates an estimated 62 million tonnes of municipal solid waste annually, including approximately 9.3 million tonnes of plastic waste, yet only 8-12% of plastic packaging and a limited share of other dry recyclables are formally recovered, with the remainder leaking into land, drains, and open burning sites. This significant material loss persists even as India's circular economy opportunity is projected to unlock up to USD 2 trillion by 2030, underscoring a stark implementation gap between national aspirations and on-ground recycling outcomes. Over 65% of the population resides in rural and peri-urban settlements that now produce urban-comparable volumes of packaging-intensive consumption waste but remain outside reliable, verifiable, and incentivised recycling supply chains. In such contexts, first-mile systems are highly fragmented and heavily dependent on low-fare informal labour, reinforcing selective extraction of high-value polymers while low-value fractions leak at source and diminish the prospects for genuine circularity. To achieve a substantial increase in material recovery, the foundational waste collection architecture must be fundamentally strengthened and formalized. To deconstruct the mechanics of these supply chain bottlenecks, a multi-scalar diagnostic study was conducted in Alair Mandal, Yadadri-Bhuvanagiri District, Telangana. The study mapped waste flows from the Gram Panchayat (GP) level to district aggregators and state-level markets using a mixed-methods approach comprising household surveys, key informant interviews with informal stakeholders, and a comprehensive market audit of plastic value chains. The investigation reveals a highly inefficient system where rural households generate significant mixed waste but face weak segregation incentives. The existing supply chain is characterized by extreme fragmentation: informal collectors operate with limited capacity, capture only high-value fractions, and leave low-value plastics to leak into the environment. This intermediary-heavy model fails to aggregate sufficient volumes or quality to satisfy the industrial material requirements of large-scale recyclers, resulting in systemic leakage and lost economic value. The current market-led informal model is structurally incapable of delivering the scale required for a developed circular economy. To bridge this gap, this paper proposes a transition to a formal Three-Tier Cooperative Model (GP to District to State). By aggregating volumes at the district level and digitizing inventory like successful agri-commerce models, this framework can bypass predatory intermediaries, ensure consistent feedstock for recyclers, and transform waste management into a dignified, scalable supply chain for a Viksit Bharat.

Keywords

Rural Solid Waste Management; Informal Recycling; Plastic Leakage; Gram Panchayat Finance; Telangana

Production of Hydrolyzed Collagen through Proteolysis of the Jumbo Squid Tunic (Dosidicus gigas)

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Abstract

In 2022, jumbo squid was the world's second most harvested marine species, with Peru contributing significantly to the global catch. Processing waste (25% of the animal's weight) offers opportunities to produce oil, silage, biofertilizers, and nutraceuticals. These by-products can reduce environmental impact, provide off-season employment, support tight-margin fishing industry and promote sustainable agriculture. This study explores the technical feasibility of extracting hydrolyzed collagen from the squid's tunic, which contains 80% protein (dry basis) and requires minimal processing investment. For this purpose, the protein content of the raw material was determined, and the degree of hydrolysis achieved at three different levels of enzymatic activity was quantified. The hydrolysate with the highest degree of hydrolysis was subjected to ultrafiltration (with a 5 kDa cutoff point membrane) and finally lyophilized. Additionally, the electrophoretic profile was examined by SDS-PAGE, and both the amino acid profile and the hydroxyproline content of the dried hydrolysates produced were quantified. A total of 11.52 g of collagen was recovered from 300 g of wet tunic. 90.5% of the collagen obtained is concentrated in the >5 kDa peptide fractions. This "concentrated" hydrolysate exhibited a higher proportion of key collagen amino acids such as glycine, proline, arginine, and hydroxyproline. Material balance indicated a recovery of 47.9% of the available protein and 40.6% of collagen. These results demonstrate that direct enzymatic hydrolysis of the tunic, without any prior drying processes, enables the extraction of hydrolyzed collagen for application in the food, nutraceutical, or veterinary industries. Therefore, sustainable transformation of high-potential waste and creation of added value in the economy of developing countries are promoted.

Keywords

Hydrolyzed Collagen; Jumbo Squid Tunic; Dosidicus Gigas; Marine Collagen

Strategic Collaboration between Green Hydrogen Sector and Agricultural Waste Management – A Bio-Economic Approach Towards Circular and Low-Carbon Economy in India

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Abstract

India has announced its Nationally Determined Contributions (NDCs) towards Paris climate goals and committed to achieve net zero by 2070 through gradual decarbonisation of economy. One of the ways for reducing greenhouse gas emission is the transition from fossil fuels to clean fuels in industrial and transport sectors. Green hydrogen emerges to be one of the suitable alternatives to the fossil fuels. In India, green hydrogen can be produced from the electrolysis of water using renewable energy and also from gasification of biomass. The large agricultural sector generates huge amount of waste biomass as crop residue which are burnt on field releasing GHGs and other harmful air pollutants causing global warming and serious health impact respectively. If the crop residue is used as raw materials for green hydrogen production, then both the problems can be avoided. Pilot scale green hydrogen project based on biomass and its scaling up have been successful. The Ministry of New and Renewable Energy (MNRE) and the department of science and technology of the government of India extended full support to make this project successful. The government of India launched National Green Hydrogen Mission in 2023 to meet an ambitious target of achieving 5.0 Million Metric Tonnes (MMT) per annum production capacity of green hydrogen by 2030 and 50MMT per annum abatement of CO_2 emission. The introduction of bioeconomy approach into the collaboration between green hydrogen and agriculture will ensure the steady supply of waste biomass for hydrogen production units. This strategic collaboration will help to bring circularity in agricultural waste management. The present study attempts to identify the technological advancement in green hydrogen production and the entry of public as well as private companies in this business. This paper throws light on India government's initiative and programmes for the promotion of green hydrogen as an alternative clean fuel to decarbonise the economy. This article explains how bioeconomy model helps in biomass based green hydrogen production by integrating agro-waste management in a circular economy framework.

Keywords

Green Hydrogen; Global Warming; Net Zero; Biomass; Bioeconomy; Circular Economy

The International Marketing of Waste and Food Residues from the Food Industry

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Abstract

For decades, the international food trade has contributed to the generation of food residues, commonly referred to as food loss and waste (FLW) by FAO. FAO has suggested that food by-products and residues (FLW) can play a role in the fight against poverty generated hunger. Interestingly, there is a trade of food residues that can be considered FLW. There is no evidence that this trade has been studied, so it is not known who participates in it nor the volumes traded. This research aims to analyze the traceability and volume of international trade of food by-products and residues (FLW) generated by the food industry. To achieve this, key trade blocs were selected for analysis: the Latin American Integration Association (ALADI), the European Union with 27 members (EU), the United States-Mexico-Canada Agreement (USMCA) (named NAFTA before July 2020), the Association of Southeast Asian Nations (ASEAN) and the BRICS countries. From 2012 to 2021, exports in this category amounted to $706.6 billion (USD), with EU emerging as the main trading bloc, followed by ALADI, USMCA, BRICS and ASEAN. The United States emerged as the country with the largest trade volume in FLW, although it is not part of a bloc with strong export performance. These findings suggest that FLW could indirectly contribute to food security through animal feeding. However, it is important to reflect on what needs to be done to make FLW trade intended for direct human consumption commercially significant.

Keywords

Waste; Trade; Food Loss and Waste; International Food Trade; Food Security

From Earth to Earth: Ladakh's Sewage Crisis and a Case for Returning to the Traditional Dry-Compost Toilets for Sustainability and Circularity

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Abstract

In Ladakh's cold, arid, and water-scarce environment, traditional dry-compost toilets (locally called Dechot, Sangchot, or Chaksa) offer a sustainable sanitation solution suitable for the region. Waterless, low-carbon, and low-infrastructure, they compost human waste into nutrient-rich fertilizer, preventing groundwater contamination. The rise of flush toilets has created sewage management challenges that conventional centralized and decentralized treatment systems struggle to address. Drawing on field studies, interviews, and secondary sources, this paper argues that preserving and promoting dry toilets can be the answer to Ladakh's current sewage and groundwater contamination crisis. Furthermore, it can improve sanitation, conserve water, and protect Ladakh's environment and culture amidst climate change.

Keywords

Sewage; Ground Water Contamination

Solid Waste Management Practices in Indian Railways: A Case Study of New Delhi Railway Station

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Abstract

Indian Railways, India's premier public sector enterprise, provides essential connectivity across the subcontinent. However, the system faces a critical sustainability issue stemming from the immense quantity of solid waste produced by its passengers each day. Ineffective management, due to the lack of a coordinated disposal system, has exacerbated environmental pollution along the railway routes, undermining the ecological integrity of the areas it serves. The report analyses solid waste management practices in Indian Railways, focusing on the New Delhi Railway Station (NDLS). The station generates around 670 tonnes of solid waste per day, accumulating to 245,000 tonnes per year. The study identifies various components of Municipal Solid Waste, including paper, organic, plastic, glass, metal, and hazardous materials. Unmanaged waste poses significant threats, such as polluting oceans, clogging sewers, spreading illnesses, and hindering economic development. The research at NDLS uses a mixed-method approach, revealing that 84% of passengers reported the absence of segregated bins inside trains and that dustbins are often full, overflowing, or smelly. NDLS has adopted basic waste management techniques, such as recycling, composting, and waste reduction, in collaboration with organizations like Rekart, Safai Sena and Chintan. However, the report highlights significant implementation gaps, such as waste segregation on trains and improved passenger awareness.

Keywords

Solid Waste Management; Indian Railways; Passengers; Material Recovery Facility

Innovation in Waste Management in India: Evidence from Exploratory Analysis from Patent Search

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Abstract

Approximately 1,70,338 tonnes of waste are generated annually in India (CPCB, 2024). Waste management encompasses several phases, from waste generation to effective disposal. Each step has evolved over the years to minimize environmental harm during final disposal. Despite these efforts, waste management remains a significant challenge. Patents serve as indicators of technological innovation when analysed with statistical tools. The current study aims to expand the understanding of waste management issues by utilizing patent analytics. Chennai zone leads in filling patent applications and indicates a contemporary approach of the inventors of this region. In contrast, Kolkata zone has fewest patent applications in waste management for various reasons like; deficiency of patenting know-how by inventors, or less focus towards waste management inventions due to lesser waste generation in this zone, or patents are filed in some other fields rather than waste management technologies etc. The results suggest that waste management practices vary geographically, as do the types of patents filed. Notably, green patents are gaining traction in the pursuit of circular economy, ultimately contributing to achieving Sustainable Development Goals (SDGs).

Keywords

Green Patents; Waste Management; Jurisdiction; Sustainable Development Goals (SDGs); Indian Patent Office

Beyond the Landfill: A Global Perspective on the Future of Sustainable Waste Management

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Abstract

Rapid urbanisation and a growing global population have made effective waste management a pressing concern. The waste disposal industry has fast become a leader in developing solutions that are both innovative and sustainable for managing waste. This paper intends to analyse and update knowledge on the emerging trends that break beyond the usual forms of waste disposal at the international level. The changing practices in this industry have been identified and summarized. Examples from different regions of the world, including developing and developed nations, depicting the most significant shifts in waste management practices across various industries are outlined. Innovations in autonomous operations encompassing all key steps of the waste management process from waste collection and transportation to sorting, treatment, and disposal are observed. Intelligent waste management solutions that leverage technologies such as Artificial Intelligence and Machine Learning are also becoming common. As a result, waste management is moving towards increased automation and circular practices. Aside from waste prevention, there is increasing investment in advanced recycling technologies and a shift towards a circular economy emphasizing the reuse and recycling of waste. Waste-to-energy has also been highly improved to offer another sustainable alternative method of disposal for waste. Still, there are challenges such as technology cost-effectiveness, availability of skilled workforce, feasibility of alternative ways of disposal, and their impact on humans and the environment which are to be addressed. This paper reviews the ongoing trends on this subject as well as how innovation adapts and takes place in different parts of the globe.

Keywords

Circular Economy; Landfill; Intelligent Waste Management Solutions; Sustainable; Waste Management Industry

Industrial Waste Intensity and the Opportunity of E-Waste Management in India's Manufacturing Sector

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Abstract

Industrial production processes generate substantial quantities of waste, including electronic waste (e-waste), yet the industrial sources of e-waste remain poorly understood in the Indian context. Existing studies largely focus on post-consumer e-waste, overlooking waste generated within manufacturing activities. This study addresses this gap by examining industrial e-waste output across India's organized manufacturing sector, with the objective of identifying waste-intensive industries rather than estimating aggregate waste volumes.

This study employs unit-level data from the Annual Survey of Industries (ASI) 2023–24. Industries are classified using the National Industrial Classification (NIC), while waste and scrap products—particularly those relevant to e-waste—are identified using the National Product Classification (NPC). This study constructs two waste intensity coefficients at the industry level. The first is a quantity-based coefficient and the second is a value-based coefficient. These coefficients capture both physical and economic dimensions of industrial waste generation. The coefficients are computed for all manufacturing industries and further disaggregated at the state level to examine spatial variation in waste intensity. By highlighting sectors with disproportionately high waste-to-input ratios, the study provides empirical evidence on industrial waste hotspots within the manufacturing system. The findings offer policy-relevant insights for targeting waste reduction, strengthening extended producer responsibility (EPR) frameworks and supporting circular economy transitions in India's industrial sector.

Keywords

E-waste; Industrial Waste; Waste Coefficient; Manufacturing

Examining the critical factors affecting waste management in construction projects using Ranking and Principal Component Analysis

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Abstract

A Prodigious amount of construction activity in Aligarh has led to the generation of high volumes of construction waste. Of particular concern is the added pressure exerted on the environmental quality of this region. Currently, data and research of quality standard are lacking in this domain of construction waste management (CWM). First, this paper provides an overview of the waste generated at eight different public housing project sites in the Aligarh district. Second, this paper analyzes the state of CWM at these sites through statistical approaches. Moreover, the results of our work also establish the connection between the extracted components and their effect on waste generation at these sites. The study provides statistical evidence on the factors that contribute significantly to waste generation by implementing Ranking and Principal Component Analysis (PCA). The Ranking analysis shows that excessive work pressure with a factor score of 2.767 is the most significant in terms of waste generation and the results for PCA indicate that site management, workmanship and material handling and design process are the most critical in terms of construction waste management. The findings of our study will therefore assist site managers and other site operatives in developing waste management awareness and will also help them in tracking potential waste generating factors at the construction sites.

Keywords

Construction Waste; Principal Component Analysis; Cronbach Alpha; Index of Factor; GIS; Ranking Analysis

Development and Validation of a Context-Specific KAP Tool Coupled with Environmental Evidence of Microplastics in an Urban Campus College Setting

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Abstract

Microplastics has raised concerns about environmental and health issues. In country like India, students constitute a large active population, and therefore targeting student practices can offer a distinct route to reduce microplastic pollution in campus environment. Most students' focused awareness studies are limited to capturing basic knowledge, attitude, and practice (KAP), and subsequent interventions are carried out without any support of local microplastic environment evidence. This often does not translate into positive sustained behavioral change. To address the gap, in existing KAP tools, which often lack contextual relevance and experimental linkage, a context-specific KAP tool was developed focusing on recent advances and health implications of microplastic exposure. To support evidence-backed intervention, microplastics were isolated from campus soil and air using conventional filtration methods. Microscopic examination reveals fibers of varying morphology. Biofilm formation was also demonstrated experimentally on microplastic material prepared in the laboratory following its exposure to soil microbiota. Microorganisms from the biofilm were subsequently isolated and characterized.

Keywords

Microplastic Pollution; KAP Study; College Students; Campus Environment; Secondary Microplastics

Fabric Waste Management using Upcycling and Bamboo Fibre

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Abstract

The textile industry is increasingly facing sustainability challenges due to the rapid growth of fabric waste, particularly in countries like India, where millions of tonnes are generated annually, with only a small proportion being effectively recycled. As highlighted in this study, most of this waste is either downcycled into low-value products or disposed of in landfills, resulting in environmental degradation and loss of material value. Despite the sector's significant contribution to economic output and employment, existing waste management systems remain fragmented, with limited technological advancement, weak market demand for recycled fibres, and insufficient policy support.

This research addresses these challenges by proposing a circular approach to fabric waste management that integrates textile upcycling with bamboo-based sustainable fabrics. A key gap identified in current practices is the lack of connection between waste utilisation, eco-friendly materials, and traditional textile craftsmanship. Existing solutions often operate in isolation and fail to address environmental, cultural, and economic dimensions simultaneously.

To overcome these limitations, the study presents a model that utilises bamboo fabric as a renewable and biodegradable base material, combined with upcycled textile waste to produce high-value, sustainable products. Bamboo's adaptability in textile processing, along with its eco-friendly properties, makes it a suitable alternative for circular textile systems. The model further incorporates traditional Indian art forms such as Chamba Rumal and Sujini embroidery, thereby preserving cultural heritage while enhancing the aesthetic and market value of the products.

The proposed framework adopts a multi-stakeholder approach involving material suppliers, designers, artisan communities, production units, and consumers, ensuring scalability and inclusivity. By promoting the participation of artisans and marginalised groups, the model not only addresses environmental concerns but also creates socio-economic opportunities. Overall, this study demonstrates that integrating circular economy principles with sustainable materials and cultural craftsmanship can lead to a more resilient and responsible textile system. It contributes to the field of sustainable fashion by offering a holistic, context-specific framework that aligns environmental sustainability with social inclusion and economic viability.

Keywords

Microplastic Pollution; KAP Study; College Students; Campus Environment; Secondary Microplastics

Role of Youth in Shaping Global Climate Justice: Providing Circular Economy

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Abstract

Youth Activism in the climate crisis has been an ongoing debate worldwide. Many international forums recognized youth activism, and youth participation in various forums dealing with climate change is increasing rapidly. Judiciary is also playing a vital role by deciding youth–led petitions providing basis for climate litigations. This societal behavioural of youth addressing climate change is promoting circular economy. This research paper is focusing mainly on youth – led movements and litigations and how these are contributing to shaping climate justice globally. However, this paper is restricted to doctrinal study of case laws and movements, and the paper doesn't look into the history of youth activism. In this research, researcher is focusing on global movements and litigations done by youth in climate justice and how these affected in shaping climate justice globally promoting circular economy.

Keywords

Climate Change; Youth-led Movements; Litigation; Circular- Economy

Sustainable Menstrual Hygiene: Policy Integration for Behavioural Change and Circular Economy

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Abstract

Menstrual health management (MHM) is a public health, equity, and environmental challenge that cannot be solved by product provision alone. Across diverse contexts-Scotland, Kenya, Uganda, and India-this paper synthesizes evidence on policy design, behavioral dynamics, and infrastructural prerequisites for accelerating sustainable transitions from disposable to reusable menstrual products such as cloth pads, menstrual cups, and period underwear. Although pro-environmental attitudes are rising, adoption of reusable products remains constrained by stigma, hygiene anxieties, affordability, and gaps in WASH (water, sanitation, and hygiene) infrastructure. Drawing on Theory of Planned Behavior (TPB), the COM-B framework, and Diffusion of Innovations we show that interventions combining education, peer demonstration, reliable access to washing and drying facilities, and supportive choice architecture achieve higher and more sustained use than price- or awareness-only approaches. We integrate program and policy experiences to propose a system-level integration roadmap: embedding menstrual literacy schools and workplaces; enabling local women-led manufacturing ecosystems; aligning procurement and Extended Producer Responsibility (E) for fiscal sustainability; and setting standards that ensure safety and consumer trust. We outline climate-resilient and humanitarian adaptations, as well as a practical monitoring and evaluation (M&E) framework, including indicators for adoption, stigma and perceived behavioral control (PBC), WASH readiness, waste diversion, and education outcomes.

For India, we propose a modular pathway that leverages national guidance and state-level adaptation, anchored in school health programs, SRHR services, and Swachh Bharat missions. The findings highlight that durable, equitable, and circular outcomes arise from coherent systems that make the sustainable choice the easy, dignified choice.

Keywords

Menstrual Hygiene; Behavior Change; Circular Economy; Public Health Policy; WASH; Gender Equity; COM-B; TPB; Diffusion of Innovations

Back to Basics: Reviving Behavioural Roots for a Circular Economy

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Abstract

This paper aims to highlight the importance of social and behavioral change in promoting a circular and low-carbon economy. Current discussions and investments primarily focus on new recycling technologies, supply chain models, and regulatory frameworks. However, their success ultimately relies on how households, consumers, and institutions act (Ajzen, 1991; Thøgersen, 2014). This work argues that behavioral correctness, rather than convenience, should be the basis for all other interventions.

This paper uses a behavioral perspective to evaluate the effectiveness and limitations of initiatives across themes like supply chain logistics, recycling, and industrial waste management. It features case studies of awareness campaigns in India and Europe, policy reviews, and insights from behavioral economics to illustrate differences between modern urban consumption and traditional Indian household practices. For example, Extended Producer Responsibility (EPR) frameworks and waste-to-resource technologies will only work when segregation at the source is achieved (Guerrero et al., 2013; Kumar et al., 2017). However, segregation rates in Indian cities remain below 50% despite existing regulations (MoHUA, 2020), while South Korea's awareness campaigns and Germany's deposit-return systems have surpassed 90% recovery rates through behavioral nudges (OECD, 2022).

This paper presents intergenerational practices like reuse, repair, and composting as effective behavioral models long before the term "circular economy" was coined. The findings demonstrate that technological and regulatory efforts cannot achieve their desired results without social involvement. Thus, community-led awareness, stakeholder partnerships, and incentive-based segregation should be prioritized. Ultimately, achieving low-carbon living requires valuing effort over ease, making social and behavioral change the foundation of a sustainable circular economy.

Keywords

Circular Economy; Social and Behavioural Change; Waste Segregation; Intergenerational Practices; Traditional Practices; Low Cost

Collaborative Governance and Behavioural Pathways for Low-Carbon Circular Economies: Evidence from Kerala, India

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Abstract

Transitions to low-carbon and circular economies increasingly depend on behavioural change, institutional capacity, and collaborative governance rather than technology alone. This paper analyses Kerala's decentralised solid waste management system through the role of the Haritha Sahaya Sthapanam (HSS), with particular reference to the IRTC-supported HSS network currently assisting around 138 Local Self-Government Institutions (LSGIs). Drawing on qualitative field observations, stakeholder interviews, and administrative records, the study examines how HSS functions as a meso-level intermediary strengthening the Haritha Karma Sena (HKS) through technology dissemination, capacity building, and management support. Findings show that HSS enhances segregation efficiency, operational coordination, and data-driven monitoring, enabling effective material recovery and reduced rejection rates. Evidence from rurban panchayats demonstrates systematic segregation of multiple plastic fractions, decentralised collection, and improved recycling linkages, contributing to emission reduction and circular resource flows. By professionalizing frontline workers and embedding behavioural change within community routines, the model integrates livelihood security, gender inclusion, and environmental performance. The study argues that intermediary institutions such as HSS are central to operationalizing low-carbon and circular transitions through decentralised, people-centered governance, offering transferable lessons for Global South contexts.

Keywords

Circular Economy; Behavioural Change; Collaborative Governance; Decentralized Waste Management; Haritha Karma Sena; Low-Carbon Transition; Kerala

Circularity in Dairy Industry through Water Footprint Analysis

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Abstract

The water, being a cornerstone of life and development, is under immense pressure due to population growth, urban expansion, climate change and increase of industrialization and commercialization. The major towns and metropolitan cities in the world witness water crisis which has been evolved from being localized to trans-boundary challenge with social, economic and ecological dimensions. There is a need to comprehensively understand the requirement of water to overcome the problem of water crisis and also to understand the concept of 'water footprint' and 'virtual water', being consumed in various commodities. The urban cities need to understand an urgent need to reuse and recycle, grey and wastewater in its areas. The water footprint needs to be understood by the city planners, so that a systematic long-term planning can be made to cater to the ever increasing of water in the metropolitan areas. This needs more focus on account of increase in the pace of urbanization, especially in the metropolitan cities in the country. The analysis of the study highlights the reshaping of accounting of virtual water and urges policy makers to integrate sustainability of water into trade, economic planning and agriculture. The ultimate pathway drives people towards responsible, sustainable and informed usage and governance of water.

Keywords

Water Footprint; Urban Water Cycle Service; Sustainable Development Goals

Urban Water Resources Sustainablity Assessment using the Metabolism Approach

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Abstract

The increasing pressure on water demand and supply necessitates immediate action. This should focus on conventional strategies for enhancing supply and managing demand, as well as incorporating fiscal and regulatory measures for water allocation, trading, and usage. The Government of India has introduced several aspirational policy documents in the past year to achieve water sustainability. The paper presents arguments on the changing paradigm of urban water sustainability and presents key findings for a study done for Panchkula city in Haryana, India. It investigates the nexus between social and environmental objectives in urban planning. It illustrates the city as a tightly coupled social-ecological system.

Keywords

Water Management; Sustainable Urban Planning; Metabolism Approach; Risks and Uncertainties

PROGRAMME SCHEDULE

PROGRAMME SCHEDULE

All time stamps are in Indian Standard Time (IST)

17 January 2026		
0900-1015 hours	**Track 1:** Advanced Recycling Technologies **Session Chair:** *Dr Suneel Pandey, Director, Circular Economy and Waste Management, TERI* **Co-chair:** *Dr Sumeet Saksena, Environmental Health Scientist, East West Centre, USA* **Moderator:** *Dr Atul Kumar, Scientist, ICWMR, TERI SAS*	**Track 2:** Optimisation Models for Waste Management Logistics **Session Chair:** *Dr Ayon Chakraborty, Associate Professor, Federation University, Australia* **Co-chair:** *Dr Dinesh Chander Pant, Senior Fellow, TERI* **Moderator:** *Dr Adil Masood, Assistant Professor, TERI SAS*
1015-1045 hours	Networking tea	
1045-1215 hours	**Track 3:** Circular Supply Chain Design for Low-Carbon Transition **Session Chair:** Dr Shyamli Singh, Associate Professor, SAU, New Delhi **Co-chair**: *Dr Kamal Kumar Murari, Assistant Professor, Centre for Climate Change and Sustainability Studies, TISS* **Moderator:** *Dr Divya Gupta, Program Manager, Climate and Sustainability team, Piramal Foundation*	**Track 4**: Policy and Regulatory Frameworks for Circular and Low-Carbon Economies **Session Chair:** *Dr Ranjana Ray Chaudhuri, Associate Professor and HoD, Department of Natural and Applied Sciences, TERI SAS* **Co-chair:** *Dr Trinh Thai Ha, Expert in Plastic and Circular Economy, Former National Manager of the Vietnam National Plastic Action Partnership (NPAP)* **Moderator:** *Dr Snigdha Goel, Environment Consultant*
1215-1330 hours	**Track 5:** Industrial Waste Management and Urban Mining **Session Chair:** *Dr. Ajoy Kumar Mandal, Principal Scientist, Global Waste Cleaning Network (GWCN), UK*	**Track 6:** Social and Behavioural Aspects for Low-Carbon and Circular Economy **Session Chair:** *Dr Sapna A Narula, Professor and Director, CCS, National*

	Co-chair: *Dr Radha Goyal, Deputy Director, IPCA* **Moderator:** *Dr Divya Gupta, Program Manager, Climate and Sustainability team, Piramal Foundation*	*Institute of Agricultural Marketing, Ministry of Agriculture and Farmers Welfare Govt of India* **Co-Chair:** *Dr Sameer Prasad, Associate Professor, Operations Management, University of Colorado Colorado Springs, USA* **Co-chair 1:** *Mr Ajay Garg, Secretary, IPCA* **Moderator:** *Dr Snigdha Goel, Environment Consultant*
1330-1430 hours	Lunch	
1600-1645 hours	**Felicitation Ceremony** **Briefing on the IRIS deliberations** *Dr Venkatesh G, Visiting Professor, TERI SAS* **Address by Vice Chancellor** *Prof Suman K Dhar, VC, TERI SAS* **Felicitation of Paper Presenters and Best Paper Awardees** **Valedictory Address** *Prof Prateek Sharma, VC, Delhi Technological University* **Closing Remarks/ Way forward** *Dr Harpreet S Kandra, Senior Lecturer, Federation University, Australia* **Vote of Thanks** *Col. B Venkat, Registrar, TERI SAS*	

PROFILES OF SESSION CHAIRS, CO-CHAIRS & MODERATORS

Session Chairs

Dr Suneel Pandey
Director | TERI, New Delhi

Dr Pandey has over 30 years of experience in municipal, industrial, and biomedical waste management, as well as environmental monitoring and treatment systems. He chairs the Ministry of Electronics and Information Technology's expert committee on circular economy in e-waste and has previously worked as a consultant with ERM India on hazardous waste and environmental assessment projects.

Dr Ayon Chakraborty
Associate Professor | Federation University, Australia

Dr Chakraborty's work focuses on sustainability, environmental management, and applied research supporting policy-relevant solutions. He is actively engaged in interdisciplinary research, international collaboration, and capacity building in the field of sustainable development.

Dr Ranjana Ray Chaudhuri
Associate Professor and Head | DoNAS, TERI SAS

Dr Chaudhuri is a civil and environmental engineer by training with a PhD in Hydrology from TERI SAS. She has over 27 years of experience in industry and academia, working on infrastructure projects such as water and wastewater treatment plants, landfills, stormwater systems, and environmental management. As a faculty member, she teaches hydrology and water management–related courses.

Dr Shyamli Singh
Associate Professor | South Asian University, New Delhi

Dr Singh is an Associate Professor at South Asian University with expertise in climate change and sustainability studies. She has extensive experience in research, teaching, and consultancy and has led several prestigious projects. A recipient of national academic awards, she has authored textbooks and policy papers and pioneered blended learning programs on climate-smart governance.

Dr Sapna A Narula

Professor and Director | CCS, NIAM, MoAFW, GoI

Dr Narula has over two decades of experience in sustainability education, research, and consultancy. She teaches agricultural marketing, food value chains, sustainability management, sustainability reporting, CSR, and climate change. She has served as a corporate trainer for management development programs. Her work integrates sustainability principles into business, agriculture, and development practices.

Dr Ajoy Kumar Mandal

Principal Scientist | Global Waste Cleaning Network (GWCN), United Kingdom

Dr Mandal has expertise in environmental science and sustainable waste management. His work focuses on scientific research, policy-relevant analysis, and the development of integrated approaches to waste cleaning, resource efficiency, and circular economy practices. He is actively engaged in international collaborations supporting evidence-based environmental policy and sustainability transitions.

Session Co-Chairs

Dr Sumeet Saksena

Environmental Health Scientist | East West Centre, USA

Dr Saksena is an Affiliate Graduate Faculty member at the University of Hawai'i at Mānoa, previously served as a Fellow at TERI, India and has extensive international research experience. His research spans indoor environmental quality, urban planning, and public health across India, Nepal, Vietnam, Pakistan, and the Philippines.

Dr Sameer Prasad

Associate Professor | University of Colorado Colorado Springs, USA

Dr Prasad is an Associate Professor of Operations Management at the University of Colorado Colorado Springs, USA. His academic work focuses on operations strategy, supply chain management, and process optimization, with applications to sustainability and organizational performance. He is engaged in research, teaching, and policy-relevant discourse on improving operational efficiency and resilience.

Dr Dinesh Chander Pant

Senior Fellow | TERI, New Delhi

Dr Pant is a Senior Fellow at The Energy and Resources Institute (TERI). He has extensive experience in environmental biotechnology, waste-to-resource technologies, and sustainable energy systems. His work integrates scientific research with policy advisory and technology development to support circular economy and climate action initiatives.

Mr Ajay Garg

Secretary | IPCA

Mr Garg serves as Secretary of IPCA, where he plays a key role in institutional governance, coordination, and program oversight. He has experience in supporting policy processes, organizational management, and stakeholder engagement, contributing to the effective implementation of climate and sustainability-related initiatives.

Dr Radha Goyal

Deputy Director | IPCA

Dr Goyal provides strategic and technical leadership in the design and implementation of climate and environmental programs. Her experience includes institutional coordination, research management, and policy advisory support, with a focus on strengthening climate governance frameworks and promoting informed decision-making through research and stakeholder engagement.

Dr Kamal Kumar Murari

Assistant Professor | Centre for Climate Change and Sustainability Studies, TISS

Dr Murari has over 15 years of experience in climate, water, and agricultural research and consulting. Currently at TISS, his work focuses on climate variability impacts, watershed management, GIS-based water assessment, and urban water demand management. He has published widely in leading journals and contributes to interdisciplinary research and data analytics programs.

Dr Trinh Thai Ha

Former National Manager of the Vietnam | NPAP, Vietnam

Dr Ha's expertise spans plastic waste management, circular economy systems, and Extended Producer Responsibility (EPR), with a strong emphasis on advancing policy, governance, and cross-sector solutions for low-carbon, circular transformations. She has helped shape national circular economy and EPR strategies, advising ministries to strengthen policy alignment and drive coordinated action.

Moderators

Dr Atul Kumar

Scientist B | ICWMR, TERI SAS

Dr Kumar has extensive expertise in life cycle assessment, solid waste management, greenhouse gas accounting, and carbon footprint analysis. He has successfully led & executed various research and consultancy projects, authored numerous publications in high-impact international journals.

Dr Adil Masood

Assistant Professor | TERI SAS

Dr Masood's work focuses on environmental management, sustainability governance, and applied research. He is actively involved in teaching, research, and facilitating policy dialogues that support sustainable decision-making.

Dr Divya Gupta

Program Manager | Climate & Sustainability, Piramal Foundation

Dr Gupta's work focuses on designing and implementing programs at the intersection of climate policy, sustainability, & development. She has experience in translating research into practice, supporting policy-relevant initiatives, and facilitating multi-stakeholder engagement

Dr Snigdha Goel

Program Manager | Piramal School of Leadership

Dr Goel has an expertise in environmental management, and policy advisory. She provides technical inputs to support evidence-based environmental planning, regulatory compliance, & sustainable development initiatives. Her work bridges research, policy, & implementation across environmental management domains.

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