

TWELFTH G. D. ROY MEMORIAL LECTURE

13 September 2025

Corporate Environmental Accountability in the Age of Industry 4.0:

Rethinking the Economy–Environment Nexus

Lecture delivered by Dr. Sharmistha Banerjee

Professor and Head, Department of Business Management, University of Calcutta



The Twelfth G. D. Roy Memorial Lecture was held on 13 September 2025 at Shivananda Hall, The Ramakrishna Mission Institute of Culture, Golpark, Kolkata–700029. The session was chaired by Dr. Dhruba Ranjan Dandapat, Professor, Department of Commerce, University of Calcutta and Former Secretary, IAA Research Foundation. He introduced the speaker and highlighted the importance of environmental accountability in advancing the global sustainable-development agenda.

The lecture examined how climate change, biodiversity loss and resource depletion have made the relationship between the economy and the environment a defining challenge of the twenty-first century. From the 1972 Stockholm Conference to the 2015 Paris Agreement and the COP30 agenda in 2025, environmental governance has developed from broad awareness towards more detailed frameworks. For businesses, this shift means moving beyond compliance-based pollution control towards strategy-driven sustainability. Environmental accounting is central to this transition because it incorporates ecological costs into corporate and national decision-making.



The presentation brought together the historical, theoretical and practical dimensions of environmental accounting. It discussed regulatory milestones and accounting frameworks, including the need for transparent and verifiable disclosures connected with net-zero commitments. It also considered stakeholder, legitimacy, stewardship and institutional theories, along with methodological approaches used in corporate environmental accounting.

Corporate practices in India and internationally were illustrated through examples involving Tata Steel, Wipro, Nestlé and Infosys. These examples highlighted the application of environmental accounting in practice, while also revealing gaps between sustainability commitments and their implementation. Looking ahead to Industry 4.0, the lecture emphasized the potential of digital technologies, real-time data and supply-chain transparency, while drawing attention to the risk of greenwashing.

The findings noted that frameworks such as GRI and SASB have helped improve corporate disclosure, but inconsistencies, customised reporting and weak or irregular declarations remain concerns. Although environmental accounting is increasingly viewed as a governance

mechanism rather than a voluntary addition, its integration into managerial control and capital allocation remains uneven.

The lecture concluded that the future of environmental accounting depends on harmonised, verifiable and impact-oriented systems that connect internal decision-making with external accountability. Stronger integration of environmental considerations into business decisions is essential for supporting net-zero pathways, ecological resilience and sustainable development.

The session was interactive and concluded with a vote of thanks to the chair, the speaker and the distinguished participants.