

The Climate Compensators

<u>Team Member Name</u>	<u>Year</u>	<u>Major</u>
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Advisor(s): Fr. Dr. Joseph Mathew SJ

Topic Title: AI Governance for Natural Capital Accountability in Steel Mining

Audience: Board of Directors of Tata Steel

Sustainable Development Goal

SDG #13 – Take urgent action to combat climate change and its impacts

SDG #15 – Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt biodiversity loss

Executive Summary

Steel manufacturing is inescapably connected to mining activities, which affect the landscape and alter ecosystem services. According to the World Economic Forum, \$44 trillion of the world's economic value depends on nature, while steel manufacturing is responsible for about 7-9% of global CO₂ emissions, thus connecting changes in the landscape resulting from mining with climate-related risks. Land use changes resulting from mining activities are a significant cause of biodiversity loss, as highlighted by global scientific assessments, while corporate biodiversity monitoring is periodic and fragmented.

We, The Climate Compensators, recommend to the Board that it consider deploying a biodiversity intelligence platform using AI at large-scale mining sites. This would utilize satellite, drone, and computer vision images to identify changes in vegetation, species, and habitats in near real time. Human involvement is still the center of the process using participatory data collection in AI training and expert validation before governance. This is feasible, as highlighted by current practices, where mining firms use artificial intelligence to identify species and predict deforestation risks, such as Rio Tinto's wildlife detection image pipeline and Vale's PrevisIA platform.

We recommend the following actions, which need to be undertaken immediately: a) a pilot program to automatically monitor ecological changes at a single large-scale site, b) the inclusion of biodiversity metrics in the executive dashboard provided to the Board linking outcomes to managerial accountability, and c) alignment of reporting with the Taskforce on Nature-related Financial Disclosures.