Income-Based Inequalities in the Environmental Footprint of Protein Consumption in Asia

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The growing demand for protein, driven by population growth and dietary shifts, presents critical environmental challenges. While global studies have explored protein-related environmental impacts, the extent to which these burdens vary across income groups in Asia remains insufficiently examined. This study investigates income-based inequalities in the environmental footprint of protein consumption across Asian countries, addressing disparities in resource use and ecological impact. Using an input-output model based on EXIOBASE, we quantify the environmental costs of plant-based and animal-based protein consumption across income groups, assessing four key dimensions: land use, greenhouse gas emissions, water consumption, and biodiversity loss. The analysis reveals stark inequalities, with higher-income groups driving disproportionately higher environmental impacts through greater reliance on animal-based proteins, while lower-income groups bear indirect burdens despite consuming less resource-intensive diets. By integrating income distribution with environmental accounting, this study provides novel insights into the socio-environmental trade-offs of dietary patterns in Asia. The findings inform policies aimed at promoting equitable and sustainable dietary transitions, highlighting the need for income-sensitive strategies in food system transformation.