



# Greening Transportation Infrastructure Development Integrated Program

## The Issue

Infrastructure development is essential to meet humanity's social and economic needs, including ramping up a global energy transition to meet net-zero targets. This is especially true in developing economies where millions of people continue to lack access to basic services like water, energy, transportation, and telecommunications. It has been estimated that \$95 trillion in new infrastructure is needed by 2040 alone to meet demand—twice the infrastructure that existed in 2012.<sup>1, 2</sup> This level of investment will have profound social and environmental consequences, including biodiversity loss, deforestation, and greenhouse gas emissions.

Anticipated investments in transportation and energy sectors are expected to be particularly impactful. More than 25 million km of new roads are anticipated by 2050, 90% in developing countries.<sup>3</sup> New roads will drive further deforestation in the last remaining old-growth forests. This, in turn, will increase habitat fragmentation and loss of ecosystem connectivity, while elevating risks for zoonotic disease spillover.

There are two important drivers of these impacts. First, transportation infrastructure is based on an insufficiently holistic understanding of true investment risks and environmental costs and benefits. Second, decision makers are not realizing the full potential of nature-based infrastructure solutions.

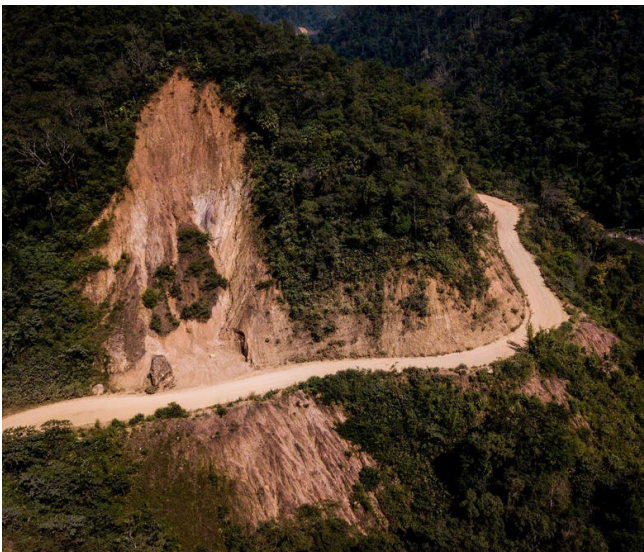
While ecosystem services are increasingly valued, their benefits are rarely incorporated into infrastructure sector plans. This is because current cost-benefit analysis standards and practices do not sufficiently consider the true negative costs of built assets or the positive benefits of these solutions.

Without significant change in the status quo, additional infrastructure development investment in the coming decades will make it impossible to meet the goals of the UNFCCC, CBD, and UNCCD.

## The Integrated Solution

The Greening Transportation Infrastructure Development Integrated Program aims to enable countries to develop portfolios of transportation infrastructure projects at national or land/seascape levels that build in sustainability from inception through:

- Avoiding placement of transportation infrastructure in globally important and particularly sensitive ecological areas, thus significantly reducing negative impacts to ecosystems from essential infrastructure development.
- Enabling countries to recognize ecological services that must be maintained to either serve infrastructure needs, such as free-flowing rivers that enable multi-modal transport systems, or reduce risks to engineered infrastructure, such as forested slopes that protect roads from landslides and erosion.



- Striking a balance between investment in new transportation infrastructure and maintaining existing assets to meet sustainable infrastructure service delivery requirements.

The program will achieve this by improving planning, regulatory, financial, and institutional and management frameworks geared to the differential needs of countries and landscapes. Important criteria that will be considered as part of these frameworks include whole life costs, holistic investment, net-zero, resilience, flexibility, and multi-use design. These framework elements are essential for a well-operating transportation infrastructure industry and more importantly for embedding sustainability into infrastructure operations.

## Expected Outcomes

The program seeks to ensure that transportation infrastructure projects will emphasize and produce biodiversity, avoided land degradation, and climate change mitigation benefits. It will do this by (i) avoiding placing infrastructure in critical ecosystems; (ii) restoring biodiversity around the right of way of a road; (iii) maintaining flows/connectivity for fluvial transport; and (iv) maintaining or enhancing wildlife crossings or other natural infrastructure to increase ecosystem connectivity and facilitate the movement of animals.

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- 1 Oxford Economics. 2017. Global Infrastructure Outlook. Global Infrastructure Hub. <https://www.oxfordeconomics.com/recent-releases/Global-Infrastructure-Outlook>
  - 2 Bhattacharya, A., Oppenheim, J. & Stern, N. 2015. Driving Sustainable Development through Better Infrastructure: Key Elements of a Transformation Program. Brookings Institution, The New Climate Economy and Grantham Research Institute, Washington, DC, USA.
  - 3 Alamgir M., M.J. Campbell, S. Sloan, M. Goosem, G. R. Clements, M.I. Mahmoud, W. F. Laurance. 2017. Economic, Socio-Political and Environmental Risks of Road Development in the Tropics. *Curr Biol.* 27(20):R1130-R1140.

The Global Environment Facility (GEF) is a family of funds dedicated to confronting biodiversity loss, climate change, pollution, and strains on land and ocean health. Its grants, blended financing, and policy support helps developing countries address their biggest environmental priorities and adhere to international environmental conventions. Over the past three decades, the GEF has provided more than \$22 billion and mobilized \$120 billion in co-financing for more than 5,000 national and regional projects.

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