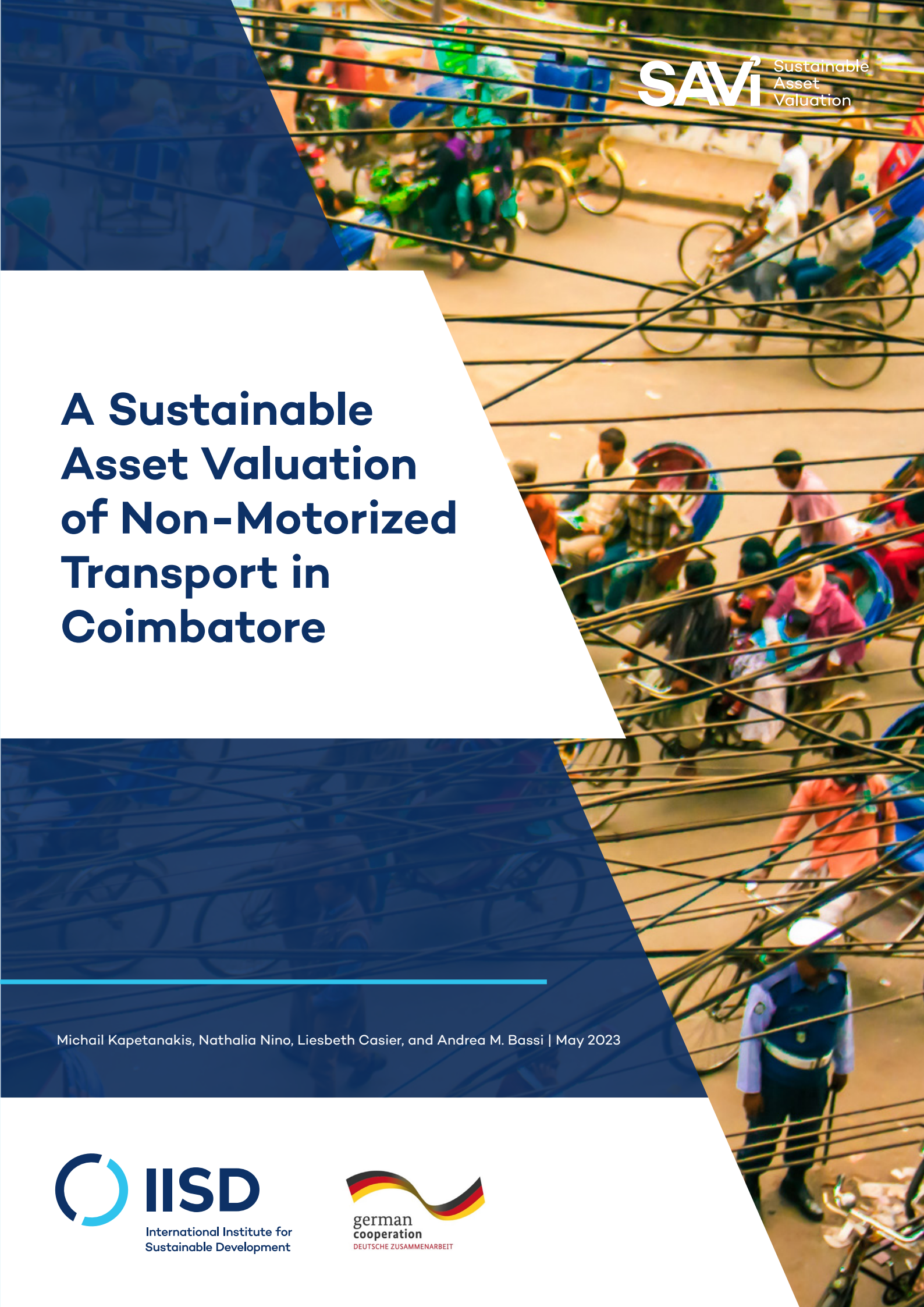

SAVi Sustainable Asset Valuation

A Sustainable Asset Valuation of Non-Motorized Transport in Coimbatore

Michail Kapetanakis, Nathalia Nino, Liesbeth Casier, and Andrea M. Bassi | May 2023

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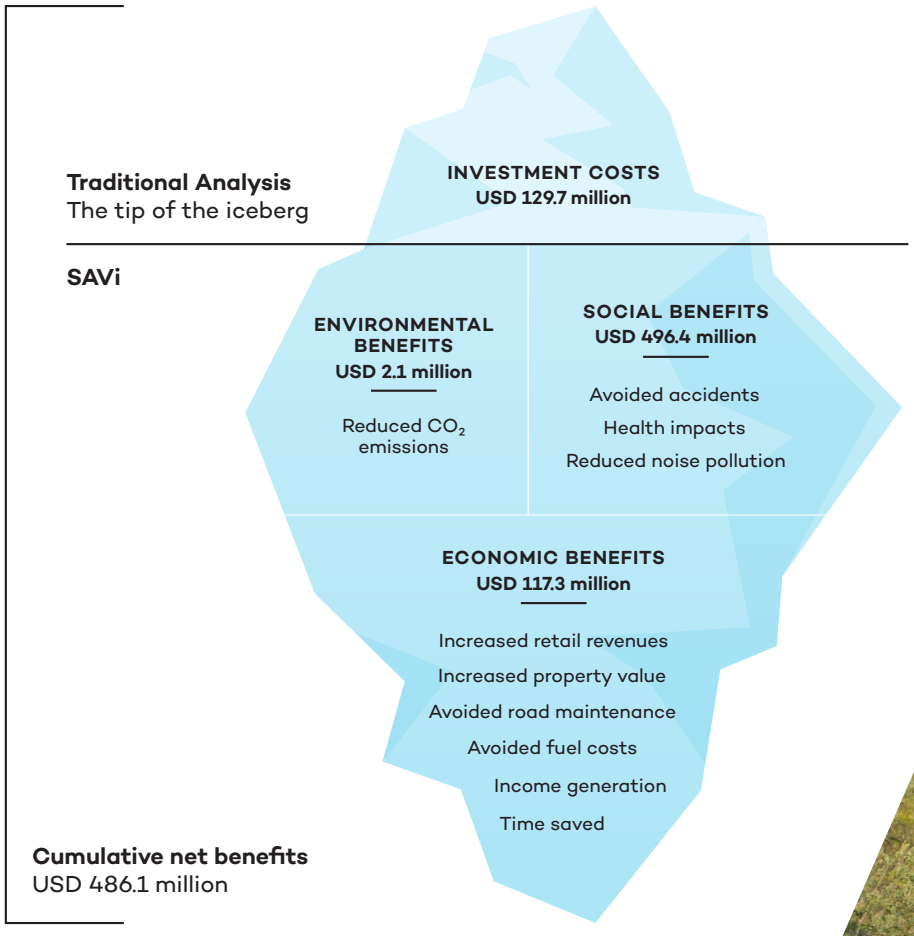
Coimbatore is the second largest city in the state of Tamil Nadu in southern India, with a population of 1.6 million people across 257 km2. Like many other densely populated cities, Coimbatore faces numerous urban mobility and transport challenges, such as high traffic volumes, congestion, long commuting times, safety concerns, and air pollution. Currently, 14% of the city's residents walk as their main transport mode, while 1% cycle, 43% use public transport, and 33% use private motor vehicles.

To address these challenges, the Coimbatore City Municipal Corporation developed a Non-Motorized Transport (NMT) Plan that will be implemented over a 15-year period and completed by 2035, identifying 300 km of NMT routes across the city. The plan is expected to directly benefit approximately 1 million people (60% of Coimbatore's population), improving accessibility for disadvantaged groups such as women, the elderly, and low-income communities, as well as reducing up to 13% of the projected CO_2 emissions from passenger transport.



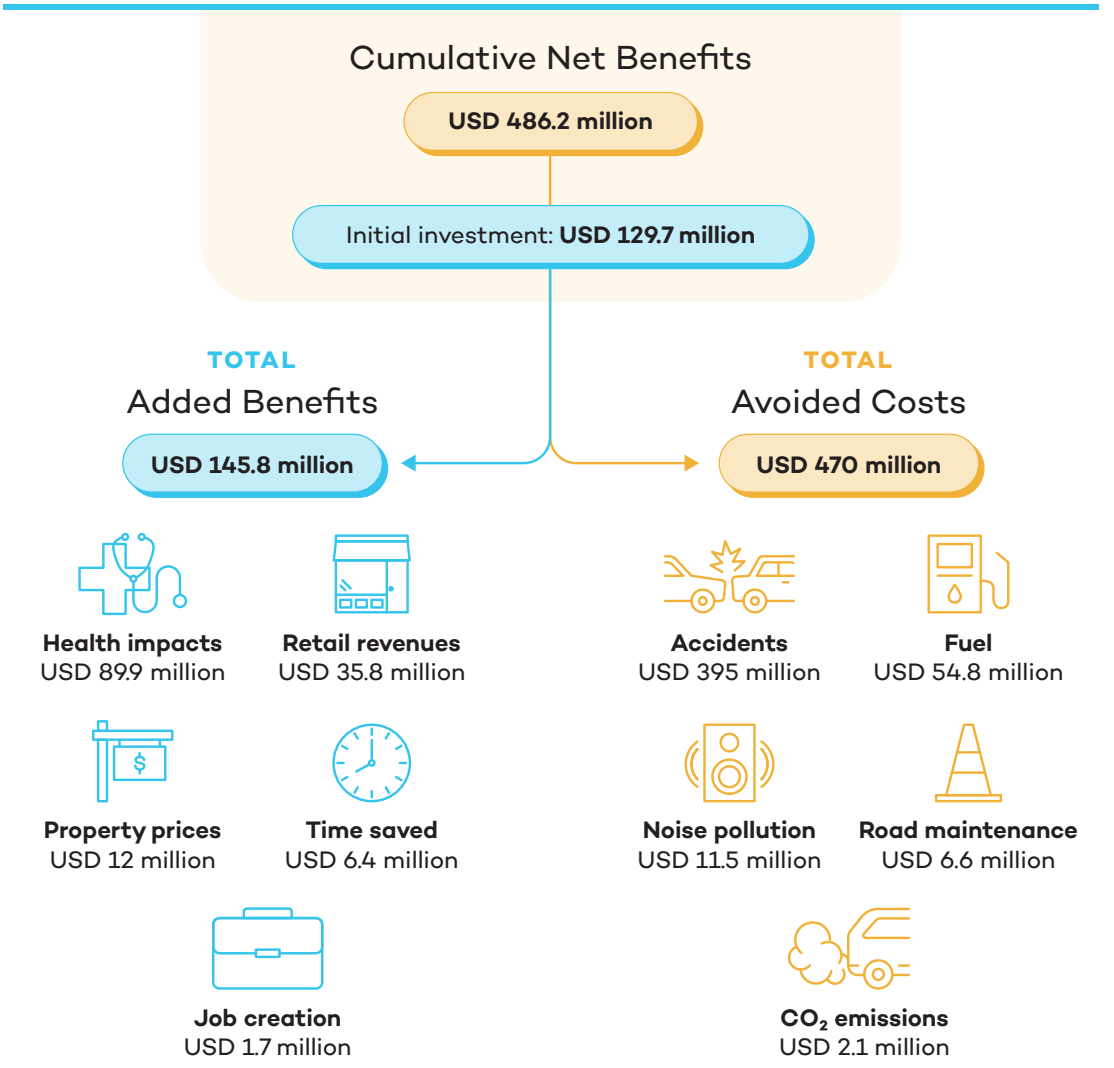
The NMT network's overall investment costs amount to INR 9,895 million, or USD 129.7 million. Overall, the comprehensive, citywide NMT network is expected to sustain both existing and future NMT demand while meeting sustainable low-carbon mobility targets by providing both safe walking and cycling options and greater accessibility to public transport. The project will also provide incentives for a shift from private motorized transport to NMT.

The Sustainable Asset Valuation (SAVi) methodology provides policy-makers and investors with a comprehensive analysis of the costs and benefits of their infrastructure project or policy intervention throughout its life cycle. We consider a wide range of economic, social, and environmental risks and impacts that are typically overlooked in traditional valuations, looking below the surface for the broader knock-on effects of implementing a transport project.

The assessment shows that the proposed NMT network in Coimbatore would provide efficient, convenient, safe, and affordable transport while also delivering substantial benefits to the city. The technical report presents the results of a variety of scenarios, with a higher and lower range for the value of the externalities.

For this summary, we have presented the findings using the most conservative estimate. We found that the NMT network would generate a cumulative net benefit of INR 37,104 million (USD 486.1 million), considering a project period of 23 years from 2022 to 2045 (including 15 years of construction and 8 years of operation). When accounting for the full range of benefits for the city, the NMT network results in an integrated benefit-to-cost ratio of 4.75 per USD invested.

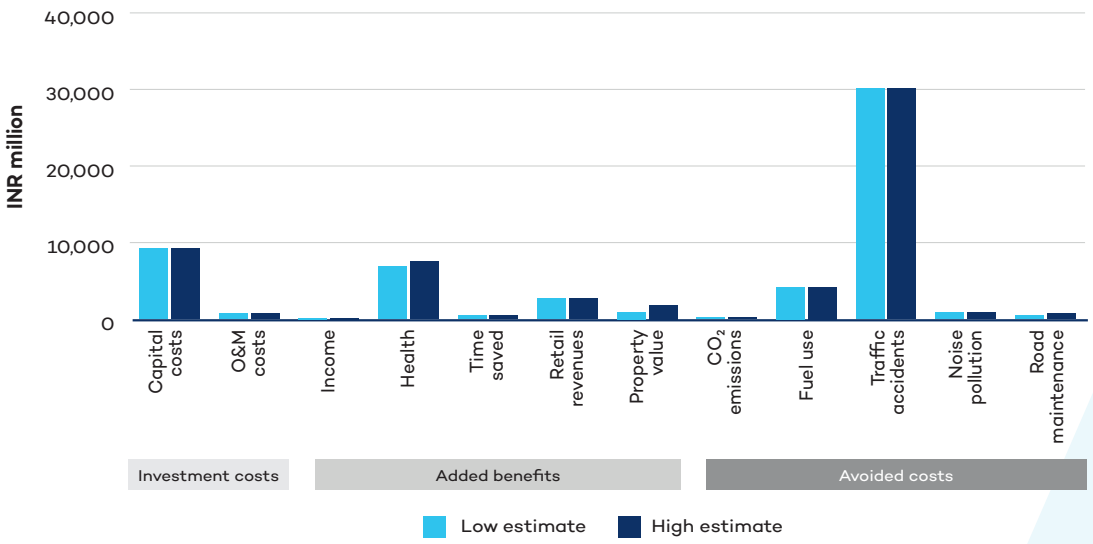
The NMT network will produce significant health benefits for the residents, including increased physical activity and reduced levels of air pollution, plus increases in retail and property values and significant reductions in the costs of accidents and fuel use. The SAVi assessment—summarized in the infographic below—also demonstrates the avoided costs of reduced CO_2 emissions in addition to reduced costs associated with road maintenance and noise pollution.



The greatest impact of the proposed NMT network is the INR **30,144 million (USD 395 million) in avoided costs from traffic accidents**. Taking into account the human capital costs, resource costs, and human suffering costs associated with accidents, the SAVi assessment helps identify and value the broader impact of the project in terms of better protecting citizens and avoiding costs in the long term.

Secondly, the project also has the potential to greatly improve public health. An **added benefit of at least INR 6,857 million (USD 89.9 million) could be achieved** through increased physical activity and its associated health benefits and the reduced health costs resulting from decreased air pollution, both of which will ultimately result in reduced mortality in the city.

Monetary values of investment costs, added benefits, and avoided costs for the NMT network in Coimbatore (cumulative discounted values 2022-2045)



Integrated valuations such as the SAVi assessment build a fuller picture of the long-term effects that the conventional benefit-cost ratio (BCR) is unable to consider. A traditional BCR for this project considering only the tangible impacts (e.g., capital costs, operational and management costs, and avoided costs of fuel use and road maintenance) amounts to 0.47 for every USD invested. This would, therefore, not be considered an investment-worthy project by traditional standards. However, the sustainable benefit-cost ratio (S-BCR), which considers the project from a societal point of view and is based on the estimation of the full range of economic, social, and environmental added benefits and avoided costs, amounts to 4.75, demonstrating the huge value the proposed NMT network would bring from a socio-economic perspective.

Overall, the project's benefits outweigh the investment costs by almost 5 times. This also demonstrates that advancing sustainable transport investment options like the NMT in Coimbatore requires identifying, assessing, and valuing these societal benefits and avoided costs so that city planners and project developers can advocate for their implementation and financing.

Benefit-to-cost ratios

BCR	0.47
S-BCR	4.75

It is crucial that policy-makers design and implement processes that enable the recognition and accounting of these wider benefits so that decisions are made in favour of transport investments that provide the greatest benefits to society while minimizing their environmental impacts.

This assessment was developed with the financial support of the German Federal Ministry for Economic Cooperation and Development.

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Why Use SAVi?

SAVi calculates the environmental, social and economic risks and externalities that impact the financial performance of infrastructure projects. These variables are typically ignored in traditional financial analyses.

SAVi is a simulation tool that is customized to individual infrastructure projects. It is built on project finance and systems dynamics simulation.

Visit the SAVi webpage: iisd.org/savi

About SAVi

SAVi is a simulation service that helps governments and investors value the risks and externalities that affect the performance of infrastructure projects.

The distinctive features of SAVi are:

- Valuation: SAVi values, in financial terms, the material environmental, social and economic risks and externalities of infrastructure projects. These variables are ignored in traditional financial analyses.
- Simulation: SAVi combines the results of systems thinking and system dynamics simulation with project finance modelling. We engage with asset owners to identify the risks material to their infrastructure projects and then design appropriate simulation scenarios.
- Customization: SAVi is customized to individual infrastructure projects.

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