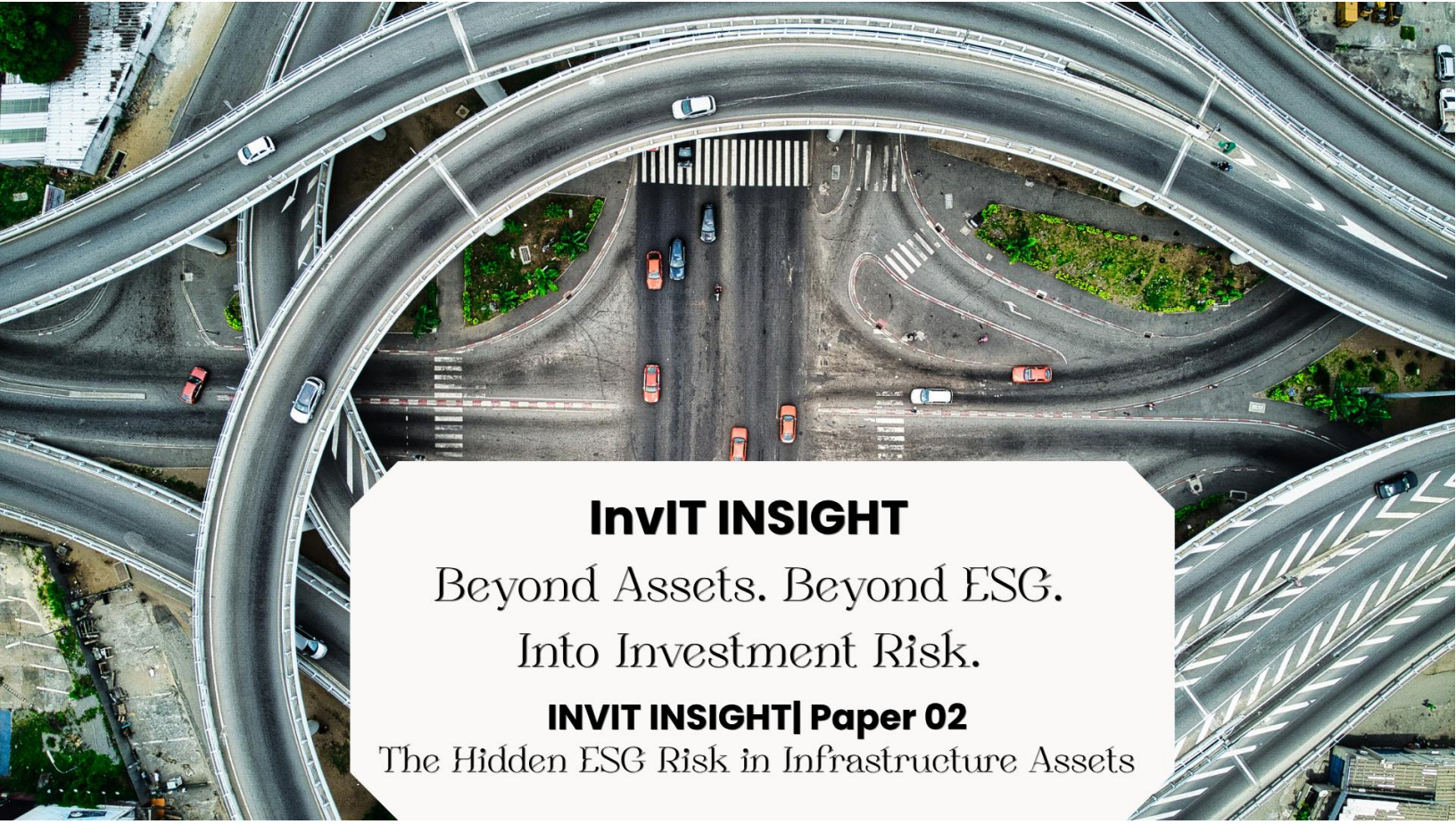

The Hidden ESG Risk in Infrastructure Assets

What Investors May Not See in the InvIT's Headline Numbers

INVIT INSIGHT | Paper 02

Niche99 ESG Ratings
ESG Ratings From India, For India, In Indian Context
Decision-Grade ESG Intelligence — Translating ESG into Business Outcomes

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Executive Summary

India's InvIT market has evolved from an emerging infrastructure financing mechanism into a significant institutional investment platform. With approximately ₹7.1 lakh crore of AUM as of FY2025–26, ₹22,769 crore distributed to unitholders during FY2025–26, and cumulative distributions exceeding ₹91,000 crore, the economic significance of the asset class is no longer in question. The Bharat InvITs Association estimates that InvIT AUM could potentially reach approximately ₹21 lakh crore by 2030.

But as the asset class grows, another question becomes increasingly important:

How much of the ESG risk within an InvIT is actually visible at the trust level?

An InvIT is not a single operating entity. Its value ultimately derives from a portfolio of physical infrastructure assets, often held through SPVs and operated through multiple contractual and operational relationships.

The ESG risk may therefore reside not in the InvIT itself, but in a particular asset, location, concession, operating contractor, supply-chain dependency, environmental approval, recurring safety incident, community dispute or governance relationship within an SPV.

This creates what this paper calls the Asset-Level ESG Blind Spot.

A portfolio-level ESG assessment may tell investors how the InvIT looks. Asset-level intelligence seeks to establish where the risk actually sits.

This paper proposes a framework for identifying those hidden signals through:

LOCATE >> EXPOSE >> DEPEND >> INVESTIGATE >> VERIFY >> ASSESS >> TRACK

1. The InvIT Paradox

An InvIT can become increasingly diversified while its ESG risks remain concentrated.

Consider a hypothetical portfolio of 20 assets. Nineteen may have strong compliance, low controversy, good safety performance and limited climate exposure. One asset, however, may have significant flood exposure, repeated operational incidents, contractor safety concerns, unresolved community grievances and a high contribution to portfolio cash flows.

This creates the InvIT Paradox: portfolio diversification can reduce investment concentration while simultaneously obscuring ESG concentration.

The investor should therefore ask not only, **"What is the InvIT's ESG score?" but also, "Which assets are driving the ESG risk?"**

2. The Asset Is Where ESG Risk Becomes Real

Infrastructure is fundamentally different from an asset-light business. A highway exists in a particular geography. A transmission line crosses particular communities and ecosystems. A renewable-energy project

depends on land, water, grid connectivity and weather conditions. A data centre depends on electricity, cooling, water and physical security.

The ESG risk is therefore often physical and location-specific.

3. Where Does the Risk Hide?

3.1 Geography

Risk can be embedded in the location of an asset. Potential exposures include flooding, extreme heat, cyclones, drought, water stress, seismic activity and biodiversity sensitivity.

3.2 Contracts

Risk may sit with the party operating or maintaining the asset, including EPC contractors, O&M providers, labour contractors and concession obligations.

3.3 Dependencies

An asset may depend heavily on a single external factor such as grid evacuation, electricity and cooling, traffic and connectivity, equipment or land access.

3.4 History

The strongest warning signal may be what has already happened: regulatory notices, environmental incidents, safety events, litigation, community complaints and operational disruptions.

3.5 Behaviour

Management behaviour is another hiding place: speed of remediation, accountability, disclosure quality, recurrence and board oversight.

4. Climate Risk: From Location to Financial Exposure

Climate risk is particularly relevant to infrastructure because infrastructure assets are geographically fixed, capital intensive, long-lived and often difficult to relocate.

The World Bank's Infrastructure Monitor 2024, using GRESB infrastructure asset data, found that among reporting infrastructure assets, 51% identified flash flooding as a physical risk, 45% identified river flooding, 46% identified heat stress and 37% identified drought stress.

Importantly, infrastructure owners also identified potential financial consequences: 53% reported increased capital costs as a financial impact, 42% identified increased operating costs and 28% identified higher insurance premiums or reduced insurance availability.

CLIMATE RISK IS THEREFORE NOT SIMPLY FLOOD >> ENVIRONMENTAL PROBLEM. IT CAN BECOME FLOOD >> ASSET DISRUPTION >> HIGHER COST / LOST OUTPUT >> CASH-FLOW IMPACT.

5. India's Infrastructure Reality

The World Bank estimates that more than 80% of India's population lives in districts at risk from climate-induced disasters.

The 2018 Kerala floods and landslides affected approximately 5.4 million people, damaged or destroyed more than 10,000 km of roads and resulted in estimated losses of approximately US$3.8 billion.

The lesson for InvIT investors is not that every climate event will affect distributions. It is that physical climate exposure needs to be assessed at the asset level before its financial implications can be understood.

6. The Incident Trail

ESG risk often develops gradually. A useful way of analysing it is to reconstruct the Incident Trail.

SIGNAL >> EVENT >> RECURRENCE >> PATTERN >> FINANCIAL RELEVANCE

One event may be an isolated incident. Repeated events can reveal a pattern. The objective is therefore to identify patterns and trajectories rather than simply count controversies.

7. Small Events Can Become Big Signals

A sequence such as safety incident >> corrective action >> second incident >> third incident >> similar root cause can indicate systemic weakness.

The relevant question is no longer simply "How many accidents occurred?" It becomes **"Why are similar incidents recurring despite corrective action?"**

8. The Contractor Blind Spot

Infrastructure operations frequently depend on third parties. An asset's ESG risk may therefore be significantly influenced by EPC contractors, O&M providers, labour contractors and specialist service providers.

The key question is: Does the InvIT's ESG assessment extend far enough down the operating chain to identify material third-party risks?

9. The Data Blind Spot

One of the most underappreciated risks is not bad ESG performance. It is insufficient information about ESG performance. Information may be Reported, Verified, Derived, Partial or Unknown.

Unknown does not mean low risk. If an asset's flood resilience has not been assessed, that does not mean flood risk is low. If contractor safety data is unavailable, that does not mean contractor risk is low.

The absence of evidence should therefore sometimes become an information-risk signal.

10. Management Response as a Risk Indicator

Two assets may experience the same incident but demonstrate very different risk profiles depending upon how management responds.

Look for speed of remediation, quality of root-cause analysis, accountability, disclosure quality, recurrence and board oversight.

An ESG event is information. Management's response to that event is intelligence.

11. The Hidden ESG Risk Framework

Niche99 proposes seven questions for each material infrastructure asset:

01 — LOCATE
Where is the asset?

02 — EXPOSE
What environmental, social and governance risks is it exposed to?

03 — DEPEND
What critical external factors does it depend upon?

04 — INVESTIGATE
What incidents, controversies and regulatory signals exist?

05 — VERIFY
What evidence supports management's claims?

06 — ASSESS
What is the potential materiality?

07 — TRACK
Is the risk improving, stable or deteriorating?

LOCATE >> EXPOSE >> DEPEND >> INVESTIGATE >> VERIFY >> ASSESS >> TRACK

12. From ESG Data to Risk Signals

The objective should not be to collect more ESG data for its own sake. It is to identify signals.

DATA >> SIGNAL >> INVESTIGATION >> VERIFICATION >> ASSESSMENT >> INVESTOR INTELLIGENCE

This is the difference between ESG data and ESG intelligence.

13. Asset-Level ESG Risk Dashboard

Indicator	Illustrative Asset A

ESG Risk	Medium
Climate Exposure	High
Environmental Risk	Medium
Social Risk	Low
Governance Risk	Medium
Contractor Risk	High
Historical Incidents	4
Data Gaps	2 material
Management Response	Moderate
Risk Trajectory	Deteriorating
Financial Materiality	High
Investor Attention	Elevated

The purpose is not to create another score. It is to answer: **Where should the investor pay attention?**

14. From Asset Risk to Portfolio Risk

Once asset-level information is available, investors can aggregate intelligently: risk concentration, financial concentration, geographic concentration, dependency concentration and risk trajectory.

This produces a much more useful portfolio ESG risk map than an average ESG score.

15. What Investors Should Look For

Asset — Where is it?

Exposure — What can affect it?

Dependency — What does it rely on?

History — What has happened?

Recurrence — Has it happened again?

Response — What did management do?

Evidence — Can the response be verified?

Trajectory — Is the risk improving or worsening?

Materiality — Could it matter financially?

16. The Niche99 Perspective

Niche99's approach is based on a simple proposition: The objective of ESG analysis is not to produce more information. It is to uncover information that can improve decisions.

For InvITs, this requires moving beyond trust-level disclosure to asset-level evidence; beyond historical performance to risk trajectory; beyond incident counting to pattern recognition; and beyond an ESG score to decision-grade ESG intelligence.

17. The Investor's Ultimate Question

The most important question is not "Is this asset ESG compliant?" Nor is it "What is the ESG score?"

The better question is: "What could impair this asset's ability to deliver its expected economic value and is there evidence that management is prepared for it?"

Conclusion

Infrastructure assets do not experience ESG risk at the portfolio level. They experience it on the ground.

A flood affects a particular asset. A safety failure occurs at a particular site. A community dispute emerges around a particular project. An environmental breach originates from a particular operation. A contractor failure affects a particular activity. A governance weakness may originate within a particular SPV or contractual relationship.

Yet these risks can disappear into aggregate portfolio disclosures. That is the hidden ESG risk.

The next generation of InvIT ESG intelligence must therefore move from PORTFOLIO >> ASSET; DISCLOSURE >> EVIDENCE; EVENTS >> PATTERNS; STATIC SCORE >> RISK TRAJECTORY; ESG INFORMATION >> INVESTMENT INTELLIGENCE.

The risk that is averaged away may be the risk that matters most.

Research References

Bharat InvITs Association — InvIT industry statistics and market outlook; market size, distributions, investor base and 2030 outlook. https://www.bharatinvitsassociation.com/en/about-us

World Bank — Infrastructure Monitor 2024; physical climate risks and financial impacts on infrastructure assets. https://ppp.worldbank.org/sites/default/files/2025-06/infrastructure-monitor-2024-report.pdf

World Bank — India: Advancing Climate Adaptation — India's exposure to climate-induced disasters. https://www.worldbank.org/en/country/india/brief/advancing-climate-adaptation-building-resilience-to-climate-change-in-india

World Bank — Kerala Climate Resilience — impacts of the 2018 Kerala floods and infrastructure response. https://www.worldbank.org/en/country/india/brief/world-bank-kerala-state-partnership-breaks-new-ground-in-sub-national-strategic-engagement

Business Standard — InvITs' cumulative distribution since inception reaches ₹91,000 crore; FY26 distribution and AUM statistics. https://www.business-standard.com/amp/finance/investment/invits-cumulative-distribution-since-inception-reaches-91-000-cr-report-126061601308_1.html

About Niche99 ESG Ratings

Niche99 ESG Ratings is an India-focused ESG Rating Provider developing decision-grade sustainability intelligence for investors, financial institutions, corporates and infrastructure platforms.

Its **ESG+C™** approach combines Environmental, Social and Governance assessment with a fourth dimension—**Commitment**—to evaluate not only reported performance but also management preparedness, leadership involvement and the ability to respond to material sustainability risks.

Niche99's approach is built around the principle:

ESG Ratings From India, For India, In Indian Context.

Decision-Grade ESG Intelligence — Translating ESG into Business Outcomes.

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