

Social and Sustainability Risk Intelligence

Decision intelligence for complex social, environmental and policy risk | June 2026.

By Dr Mark Proctor and Dr Cathryn MacCallum | Sazani Associates.

The next frontier in sustainability practice is not another dashboard of indicators. It is the ability to convert evidence into board-grade judgement early enough to shape project design, investment decisions and stakeholder strategy.

At a glance

Organisations are under growing pressure to prove that projects, investments and value chains are responsible, legitimate and resilient. Reporting and due diligence have improved transparency, but they often stop short of explaining why risks emerge, how they interact and which choices will reduce exposure while strengthening value. Sazani's risk intelligence approach addresses this gap by combining social science, governance analysis, contextual evidence and decision discipline.

The problem	The intelligence response
More legacy ESG data, but not always better decisions.	Convert fragmented evidence into decision-ready intelligence.
Generic legacy sustainability tools rarely speak the language of mining, transition infrastructure or place-based development.	Use sector-specific and context-specific analytical frameworks.
Regulatory exposure is often treated as a generic checklist.	Gate analysis to the actual jurisdictional, value-chain and project footprint.
Social risk is treated as static, measurable and separate from strategy.	Analyse legitimacy, trust, power, livelihoods and institutions as dynamic risk drivers.
AI tools can create false confidence if they infer too much from weak evidence.	Make source documents, evidence confidence, document age and absence claims explicit.

1. Why this matters now

Corporate responsibility has moved from voluntary CSR towards ESG reporting, mandatory sustainability disclosure and risk-based due diligence. The direction of travel is clear: organisations are expected not only to report on sustainability performance, but to identify, prevent, mitigate and account for adverse impacts across operations, supply chains and business relationships (Frynas, 2005; Blowfield and Murray, 2019; OECD, 2018; European Parliament and Council, 2022; European Parliament and Council, 2024a).

This evolution is important, but it has not solved the central challenge. Projects can comply with regulation, publish ESG data within legacy reporting systems and maintain formal management systems while still facing opposition, permitting delays, litigation, reputational damage or loss of trust. The reason is straightforward: many of the risks that matter most are not contained within single indicators. They emerge through relationships between people, institutions, environments, markets and political choices.

The challenge is particularly acute in critical raw materials, mining, energy, infrastructure, forestry and nature-based solutions. These sectors sit at the intersection of climate policy, biodiversity, land and

resource rights, Indigenous and community concerns, local livelihoods, regional development and investor scrutiny. Technical feasibility and compliance remain necessary, but they are not sufficient. The decisive questions are increasingly about legitimacy, credibility, fairness, institutional trust and the ability to adapt when conditions change (MacCallum and Jackson, 2021; Fraser, Russill and MacCallum, 2024).

This paper argues for a shift from legacy ESG compliance towards Social and Sustainability Risk Intelligence: a practical capability for interpreting complex social, environmental, governance, market and policy signals, and translating them into defensible decisions.

The issue is no longer whether organisations have sustainability information. The issue is whether they can interpret it, connect it and act on it before risks become disputes.

2. The intelligence gap left by ESG and due diligence

ESG frameworks, reporting standards and due diligence requirements have strengthened transparency. The Corporate Sustainability Reporting Directive, Corporate Sustainability Due Diligence Directive, OECD due diligence guidance and responsible sourcing standards all push organisations towards more systematic identification and management of environmental and human rights risks (OECD, 2018; MacCallum and Jackson, 2021; European Parliament and Council, 2022; European Parliament and Council, 2024a).

Yet such legacy ESG systems often answer a limited set of questions: What policies exist? What indicators are monitored? What risks have been disclosed? What systems are in place? These questions matter, but they do not always explain how social and sustainability risks form, how they reinforce one another, or which interventions are likely to work in a specific place.

This is the intelligence gap. It is the distance between information and judgement; between assessment and navigation; between knowing that a risk exists and understanding what to do about it.

The gap appears in five recurring ways. First, evidence is fragmented across environmental, social, community, legal, supply-chain, security and investor systems. Second, considerable effort goes into indicators and reports, while less attention is given to what the evidence means in social, political and institutional context. Third, social risks are assessed periodically, even though stakeholder relationships, public narratives, governance capacity and market conditions change continuously. Fourth, engagement is too often treated as a permitting or communications issue rather than an input into strategy, sequencing and investment design. Fifth, document-led diligence frequently fails to distinguish between evidence that is absent, evidence that is outdated, and evidence that exists but has not been interpreted against the right regulatory or social context.

Recent concerns about ESG rating divergence reinforce this point. Different ratings can produce different conclusions because they select, weight and interpret sustainability information differently. The problem is not simply a lack of data. It is the absence of a shared, transparent and contextual basis for interpretation (Berg, Koelbel and Rigobon, 2022; OECD, 2025).

Social risks are especially vulnerable to this problem. Emissions, water use or energy consumption can often be quantified through technical data. Social risk may involve trust, representation, power, historic grievance, local identity, perceptions of fairness and confidence in institutions. These factors are harder to measure, but they are often decisive (Proctor and MacCallum, 2019; MacCallum, Proctor and Russill, 2025).



3. What Social and Sustainability Risk Intelligence means

Social and Sustainability Risk Intelligence is the structured interpretation of social, environmental, governance, economic, security, supply-chain and policy evidence to support better decisions in complex operating environments.

It does not replace legacy ESG reporting, due diligence, impact assessment or stakeholder engagement. Instead, it sits above and across them as an integrative intelligence layer. It helps organisations understand how risks interact, why issues matter to different actors, where legitimacy is fragile, and where practical pathways exist to reduce risk while creating shared value (Porter and Kramer, 2011; OECD, 2018; Fraser, Russill and MacCallum, 2024).

At its core is a simple proposition: risks do not emerge in isolation. They emerge through relationships. The aim is not to predict social acceptance or automate legitimacy. That would be misleading. The aim is to improve the quality of judgement by making assumptions visible, evidence traceable and trade-offs explicit. This is consistent with critical social-licence literature, which treats legitimacy as relational, contextual and contested rather than mechanically measurable (Prno and Slocumbe, 2012; Owen and Kemp, 2013; Bice, 2014; Proctor and MacCallum, 2019; MacCallum, Proctor and Russill, 2025).

A digital platform can help scale this capability by organising evidence, supporting consistent workflows, documenting decisions and enabling portfolio-level visibility. However, technology is the delivery mechanism, not the intelligence itself. The intelligence comes from robust social science, contextual evidence, professional judgement and iterative learning.

4. The analytical lens

The framework requires a lens that is broad enough to capture complexity, but practical enough to support decision-making. The following domains provide that lens. They are not separate boxes; they are interacting sources of risk, opportunity and resilience.

Governance and institutions: formal and informal rules, public institutions, customary authority, accountability mechanisms, regulatory capacity, corruption risk, policy coherence and trust in decision-making.

Stakeholders, legitimacy and relationships: the quality of relationships between companies, communities, governments, civil society, investors and other actors, including voice, representation, influence, grievances, expectations and conflict dynamics.

Livelihoods, capabilities and local economies: how projects interact with employment, skills, public services, land and resource access, enterprise opportunities, social capital and local aspirations for development.

Environmental, cultural and place-based values: biodiversity, ecosystem services, cultural heritage, landscape identity, resource stewardship and the meanings people attach to place.

Policy, market and strategic context: the wider forces shaping the operating environment, including critical raw materials strategies, energy-transition narratives, responsible sourcing requirements, infrastructure priorities, regional development plans and investor expectations.

Project and value-chain dynamics: project stage, ownership, procurement, contractor behaviour, financing requirements, operational choices, supply-chain relationships and the credibility of delivery commitments.



Adaptive capacity and resilience: the ability of organisations, institutions and communities to learn, respond, collaborate and adjust as conditions change.

Together, these domains help decision-makers see patterns that conventional risk registers can miss. A grievance about employment may be connected to education pathways, contractor procurement, historic exclusion, regional inequality and weak confidence in local institutions. A biodiversity concern may be inseparable from cultural identity, land use, livelihood security and distrust of regulatory enforcement. A project that appears low-risk on paper may become contested if it sits within a wider narrative of unfair development.

5. How it works in practice

Operationalising this capability means building a repeatable workflow that turns fragmented evidence into decision-ready insight. The process is necessarily transparent, evidence-based and adaptive.

1. Frame the decision. Clarify whether intelligence is intended to support early project screening, investment due diligence, permitting readiness, stakeholder strategy, regional development alignment, portfolio risk review or crisis response.
2. Gate the analysis. Define the relevant regulatory footprint, jurisdiction, project stage, value-chain position and stakeholder context. This prevents generic legacy checklists from driving conclusions that do not fit the case.
3. Map the operating system. Identify the actors, institutions, livelihood systems, environmental dependencies, policy drivers and value-chain relationships that shape the project environment.
4. Integrate evidence. Bring together project documents, social baseline data, engagement records, grievance information, local development plans, environmental studies, governance analysis, regional statistics, media narratives, investor requirements and supply-chain evidence.
5. Assess risk interactions. Examine how issues connect. Which risks reinforce one another? Which are symptoms of deeper drivers? Which are likely to escalate? Which depend on external governance or market conditions?
6. Identify shared value pathways. Look for practical opportunities where project decisions, partnerships or investments can reduce risk and support locally meaningful development priorities.
7. Rate evidence confidence. Distinguish between well-supported findings, emerging signals, contested claims and assumptions requiring validation. Document age, source credibility and stakeholder validation should be visible.
8. Translate insight into action. Convert analysis into options, trade-offs, early warnings, management priorities and decision points.

The practical output is not a longer report. It is a clearer basis for action: what matters, why it matters, how confident we are, what may change, and what choices are available.

6. Evidence base and product readiness

The approach is not a concept in search of a method. Its core analytical components draw on applied Horizon 2020 and Horizon Europe research across multiple European regions, including Norway, Bulgaria, Spain and Germany as well as countless 'ESG' due diligence reviews for mergers, acquisitions, investors and loans. This work has tested ways to combine regional statistics, community survey evidence, capital assets analysis, governance and contextual assessment, stakeholder priorities



and decision-tree scoring to identify where development risks and shared value opportunities intersect (Proctor and MacCallum, 2019; MacCallum, Proctor and Russill, 2025).

The regional findings from the Horizon projects, demonstrated a critical point: similar policy objectives can translate into very different social realities. In Bulgaria, community priorities placed strong emphasis on employment, healthcare, education, transport and environmental protection. In Spain, opportunities were linked to natural capital, eco-tourism, sustainable agriculture, local entrepreneurship and digital infrastructure. In Norway, stronger social and human capital supported different possibilities around community-led renewable energy, resilience and collaborative development.

Sazani is translating the framework into a structured, AI-enabled due diligence workflow for investors. The workflow cross-references uploaded project documents against social, environmental, regulatory, security, integrity and supply-chain topics; gates analysis to the relevant jurisdictional, value-chain and project footprint; uses source-document citation; weights document age; and applies absence-claim discipline so that gaps are not invented where evidence is already present.

This matters because investors do not need another horizontal legacy dashboard. They need a defensible way to convert project evidence into investor-grade, board-usable judgement. The wider framework remains applicable beyond mining investor diligence, including critical minerals, transition infrastructure, nature-based solutions, blue carbon, regional development and other contexts where social, environmental and policy realities determine risk and resilience.

The methodology has therefore moved beyond theory. It has been demonstrated in operationally relevant research settings and complemented by live diligence applications. The next task is to package, govern, replicate and scale it responsibly. AI-assisted features may help summarise evidence, identify patterns and flag emerging signals, but social legitimacy cannot be predicted mechanically. Any digital solution must remain transparent, source-linked and accountable.

7. Business value

The commercial value of Sazani's risk intelligence approach lies in helping organisations make better decisions earlier. In sectors where permitting, financing, community relationships and policy legitimacy are decisive, delayed recognition of social and sustainability risk can be costly.

The value proposition is strongest where projects are land-intensive, politically visible, environmentally sensitive, supply-chain critical or dependent on long-term relationships with communities and public institutions.

Potential use cases include early-stage project screening and site comparison; investor and lender due diligence; permitting readiness and stakeholder strategy; critical raw materials and responsible sourcing assessments; portfolio-level risk intelligence; community benefit and shared value pathway design; review of contested projects or fragile stakeholder relationships; board-level sustainability risk reporting; and learning systems for organisations operating across multiple regions.

For companies, the benefit is reduced exposure to avoidable delay, conflict, reputational harm and poor investment choices. For investors and lenders, it strengthens due diligence by revealing social and governance risks that may not appear in technical studies or ESG ratings. For governments and regulators, it supports more realistic understanding of the conditions required for responsible development. For communities, it can improve the quality of engagement by linking consultation to evidence, priorities, trade-offs and decisions.



The strongest business case is not only risk reduction. It is strategic resilience. Projects that understand their social and sustainability context earlier are better placed to build trust, adapt to changing conditions, align with regional priorities and maintain legitimacy over time.

8. Implications for critical raw materials and transition sectors

Critical raw materials illustrate why this capability is now urgent. The energy transition depends on minerals and materials that are often extracted, processed and traded through complex global value chains. Governments are seeking secure supply. Investors want responsible sourcing. Companies face pressure to move quickly. Communities are asked to absorb local impacts in the name of wider climate and industrial objectives (EITI, 2022; European Parliament and Council, 2024b; Fraser, Russill and MacCallum, 2024; IEA, 2025).

This creates a legitimacy challenge. A project can be strategically important at national or European level, but locally contested if it does not align with place-based concerns about land, livelihoods, water, biodiversity, identity, public services, governance or fairness. Strategic importance does not remove the need for social acceptance, credible evidence and accountable decision-making (Prno and Slocumbe, 2012; Owen and Kemp, 2013; Fraser, Russill and MacCallum, 2024; OECD and IEA, 2025).

Risk intelligence can help bridge this gap. It connects strategic policy goals with local realities. It asks not only whether a project is technically viable or compliant, but whether the governance assumptions are credible, whether benefits are meaningful, whether risks are fairly distributed, and whether relationships are strong enough to withstand pressure.

This is equally relevant beyond critical raw materials. Renewable energy, infrastructure, blue carbon, forestry, nature-based solutions and industrial transition projects all operate in contexts where social, environmental and policy realities determine whether intentions become durable outcomes.

9. Conclusion: from compliance to navigation

The sustainability agenda has matured. CSR helped organisations recognise wider responsibilities. ESG brought structure, disclosure and investor attention as a legacy paradigm. Due diligence strengthened expectations around identifying, preventing and addressing adverse impacts. These advances matter, but they are no longer enough on their own (Frynas, 2005; Blowfield and Murray, 2019; OECD, 2018; Berg, Koelbel and Rigobon, 2022).

The next step is navigational capability: the ability to interpret complex signals, understand risk interactions, make trade-offs explicit and act before social and sustainability risks become embedded conflicts.

Social and Sustainability Risk Intelligence offers a practical response. It reframes sustainability from a reporting burden into a decision capability. It brings together social science, governance analysis, stakeholder intelligence, environmental context, local development priorities, regulatory footprinting, evidence discipline and value-chain understanding. It supports better judgement rather than false precision. It enables digital scaling without surrendering to black-box automation.

One productised route illustrates how the framework can be translated into investor diligence while the broader model remains applicable across transition sectors. The practical architecture is deliberately simple: social science-led, digitally enabled, evidence-based and decision-ready.

For organisations, governments and investors working in contested transition sectors, this shift is critical. Secure supply chains cannot be built on weak legitimacy. Responsible projects cannot rely on



compliance alone. The green transition will not be sustainable if its material foundations are socially contested (Fraser, Russill and MacCallum, 2024).

The future of sustainability practice will not be defined only by more metrics. It will be defined by the ability to navigate complexity with credibility, transparency and care.

If you are designing critical-minerals investment strategy, leading sustainability or risk work at a mining or transition-sector operator, or advising on regional development, Sazani Associates welcomes a conversation about how its risk intelligence approach can support earlier, clearer and more defensible decisions. DM us or visit www.sazani.org.

References

- Berg, F., Koelbel, J.F. and Rigobon, R. (2022) 'Aggregate confusion: the divergence of ESG ratings', *Review of Finance*, 26(6), pp. 1315-1344. doi: 10.1093/rof/rfac033.
- Bice, S. (2014) 'What gives you a social licence? An exploration of the social licence to operate in the Australian mining industry', *Resources*, 3(1), pp. 62-80. doi: 10.3390/resources3010062.
- Blowfield, M. and Murray, A. (2019) *Corporate Social Responsibility*. 4th edn. Oxford: Oxford University Press.
- EITI (2022) *Mission Critical: Strengthening Governance of Mineral Value Chains for the Energy Transition*. Oslo: Extractive Industries Transparency Initiative. Available at: <https://eiti.org/documents/mission-critical> (Accessed: 12 June 2026).
- European Parliament and Council (2022) Directive (EU) 2022/2464 of 14 December 2022 as regards corporate sustainability reporting. *Official Journal of the European Union*, L 322, pp. 15-80. Available at: <https://eur-lex.europa.eu/eli/dir/2022/2464/oj/eng> (Accessed: 12 June 2026).
- European Parliament and Council (2024a) Directive (EU) 2024/1760 of 13 June 2024 on corporate sustainability due diligence. *Official Journal of the European Union*, L 2024/1760. Available at: <https://eur-lex.europa.eu/eli/dir/2024/1760/oj/eng> (Accessed: 12 June 2026).
- European Parliament and Council (2024b) Regulation (EU) 2024/1252 of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials. *Official Journal of the European Union*, L 2024/1252. Available at: <https://eur-lex.europa.eu/eli/reg/2024/1252/oj/eng> (Accessed: 12 June 2026).
- Fraser, J., Russill, J. and MacCallum, C.S. (2024) 'Between a rock and a hard place: sourcing critical minerals for a green future in the European Union', *Environmental Research Letters*, 19(9), 091002. doi: 10.1088/1748-9326/ad6915.
- Frynas, J.G. (2005) 'The false developmental promise of corporate social responsibility: evidence from multinational oil companies', *International Affairs*, 81(3), pp. 581-598. doi: 10.1111/j.1468-2346.2005.00470.x.
- IEA (2025) *Global Critical Minerals Outlook 2025*. Paris: International Energy Agency. Available at: <https://www.iea.org/reports/global-critical-minerals-outlook-2025> (Accessed: 12 June 2026).
- MacCallum, C.S. and Jackson, M. (2021) 'ESG: an ethical explorationist's quandary', *Global Mining Review*, July/August 2021. Available at: <https://www.globalminingreview.com/magazine/global-mining-review/july-2021/> (Accessed: 12 June 2026).



MacCallum, C.S., Proctor, M.R. and Russill, J. (2025) 'Rethinking SLO in mining as a means to build trust and resilience', in Wood, G., Górski, J. and Mete, G. (eds.) The Palgrave Handbook of Social License to Operate and Energy Transitions. Cham: Palgrave Macmillan. doi: 10.1007/978-3-030-74725-1_44-1.

OECD (2018) OECD Due Diligence Guidance for Responsible Business Conduct. Paris: OECD Publishing. doi: 10.1787/15f5f4b3-en.

OECD (2025) Behind ESG Ratings: Unpacking Sustainability Metrics. Paris: OECD Publishing. doi: 10.1787/3f055f0c-en.

OECD and International Energy Agency (IEA) (2025) The Role of Traceability in Critical Mineral Supply Chains. Paris: OECD Publishing. doi: 10.1787/edb0a451-en.

Owen, J.R. and Kemp, D. (2013) 'Social licence and mining: a critical perspective', Resources Policy, 38(1), pp. 29-35. doi: 10.1016/j.resourpol.2012.06.016.

Porter, M.E. and Kramer, M.R. (2011) 'Creating shared value', Harvard Business Review, 89(1-2), pp. 62-77.

Prno, J. and Slocombe, D.S. (2012) 'Exploring the origins of social license to operate in the mining sector: perspectives from governance and sustainability theories', Resources Policy, 37(3), pp. 346-357. doi: 10.1016/j.resourpol.2012.04.002.

Proctor, M.R. and MacCallum, C.S. (2019) 'The Canary in the Cage: community voices and social license to operate in Central Eastern Europe'. Paper presented at Sustainable Mining 2019, GECAMIN, Santiago, Chile, October. Available at: <http://www.gecaminpublications.com/sustainable-mining-2019/> (Accessed: 12 June 2026).

