



Agate SDAS™

Decision analytics for project-development pathways

Least-resistance pathways for natural resource development

Modelling legal and regulatory frameworks, creating bureaucratic and social pressure-point intelligence libraries + process modelling + quantified risk simulation + expert-governed AI scenario appraisal.

- Permitting pathway design
- Interface-risk mapping
- Early-stage valuation confidence
- Board and investor decision packs

Projects don't fail because of geology. They fail at interfaces.

From prospecting to closure, gating events force geology, permitting, finance, infrastructure and stakeholders to align as one operating system. Agate SDAS helps expose those interfaces early, then ranks credible routes through them.

Decision outputs

• Pathway map

• Risk model

• Value envelope

From uncertainty to investable decisions

A disciplined operating model that structures the problem, quantifies uncertainty, applies expert-governed AI and produces board-ready choices.



Principle

Select the fastest credible path, not the most optimistic path.

Result

A defensible, risk-ranked project-development pathway linked to milestones and capital logic.

Core outputs

- ranked pathway map
- permitting pitfall register
- risk-weighted valuation
- board-ready decision narrative

Methodology Architecture

A connected toolchain that structures dependencies, exposes interface risk, quantifies uncertainty and ranks the most promising development pathways.



IDEFO

FUNCTIONAL ARCHITECTURE

Maps inputs, controls, outputs and mechanisms so hidden dependencies become visible.

•dependencies



Swim Lanes

RESPONSIBILITY MAPPING

Clarifies agency roles, hand-offs, decision gates and response loops across the pathway.

•interfaces



PCA

DOMINANT-DRIVER ISOLATION

Separates correlated signals and identifies the drivers that control appraisal outcomes.

•drivers



Monte Carlo

UNCERTAINTY DISTRIBUTIONS

Simulates cost, schedule, permitting and valuation ranges rather than single-point optimism.

•ranges



Agate SDAS

AI-ASSISTED SCENARIO APPRAISAL

Generates, stress-tests and scores credible scenarios under expert governance.

•scenarios

What the client receives

Pathway map

who decides what, when and why

Risk model

where delay and non-compliance concentrate

Value envelope

risk-adjusted value ranges linked to milestones

Decision pack

board-ready narrative and action sequence

Applied Capability

Godawaya / Sevanagala REE pathway

A structured project-pathway approach for practical progress routes through permitting, appraisal and early-stage valuation for a Sri Lankan critical minerals context.

PROBLEM

Multiple interfaces controlling project momentum

- Legal, regulatory, licence-condition and policy constraints
- Agency decision gates, stakeholder interfaces and evidence gaps
- Early-stage valuation uncertainty under incomplete information

APPROACH

One integrated decision architecture

- Regulatory analysis + IDEF0 process model + swim-lane appraisal map
- PCA to isolate dominant project and appraisal drivers
- Monte Carlo + Agate SDAS scenario development and pathway scoring

OUTCOME

Least-resistance pathway with transparent capital logic

- Sequenced actions and decision gates supported by evidence
- Permit pitfall register with mitigations and document dependencies
- Risk-weighted valuation ranges linked to milestones and investment narrative

How the methods interrelate

1 Structure
regime, agencies, work program and interfaces

2 Quantify
drivers, dependencies, probabilities and sensitivities

3 Simulate
schedule, cost, permit and valuation distributions

4 Decide
least-resistance pathway and investor narrative

Turning uncertainty into investable decisions.

Agate SDAS™

Developed by Matara B.A.

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